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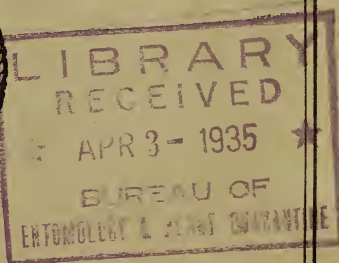
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THE DIRECT MARKETING OF HOGS



PREPARED IN THE
BUREAU OF AGRICULTURAL ECONOMICS



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This report was prepared by the staff of the Bureau of Agricultural Economics, augmented by the temporary appointment of several research men from the staffs of various agricultural colleges and other institutions of the principal hog-producing States.

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CONTENTS

	Page
Foreword.....	1
Summary, conclusions, and recommendations.....	2
The growth of direct marketing.....	3
The "drover" and the early slaughtering plants.....	3
Railroad transportation and the rise of large livestock centers.....	4
Continued importance of the small packers.....	4
Early beginning, but recent problem-status of direct marketing.....	4
Reasons for increased direct marketing in recent years.....	5
Transportation and direct marketing.....	5
Truck transportation.....	5
Railroad concentration privileges.....	6
Comparative freight charges on hogs and hog products.....	6
Wage costs and direct marketing.....	8
Cost to packers of hogs bought direct and at public markets.....	8
Findings from cost records on 673,300 hogs.....	8
Why public-market packers increased direct buying.....	8
Cost of marketing hogs direct and at public markets.....	10
Costs at concentration yards.....	11
Costs at public markets.....	11
Shrinkage.....	11
Comparative returns to producers.....	12
Producers' preferences.....	12
Direct marketing in relation to prices of hogs, competition, and market differentials.....	13
Factors determining hog prices.....	13
Buying power of domestic consumers.....	13
Export demand for hog products.....	14
Influence of charges for processing and distribution.....	14
Influence of wages, freight rates, rents, etc., on margins.....	14
Direct marketing and operating margins.....	15
Trends of margins in other products.....	15
Competition for hogs.....	16
Market outlets available to producers.....	17
Producers' source of market information.....	18
Quality of hogs at various types of markets.....	18
Differentials in price among markets.....	19
Relationship between receipts and prices at different markets.....	20
Conclusions.....	21
Recommendations.....	22
Chapter 1. Growth and present status of direct marketing.....	24
Early methods of marketing livestock.....	25
Development of commercial slaughtering plants.....	25
Centralization of packing plants.....	26
Establishment of public stockyard markets and commission selling agencies.....	26
Growth of direct marketing and hog slaughter in Iowa since 1850.....	28
Growth of direct marketing during the last decade.....	30
Trends in direct marketing of hogs in the Corn Belt States compared with trends in marketing through public stockyard markets.....	32
Chapter 2. Regional shifts and changes in corn and hog production, in receipts of hogs at public markets, and in hog slaughter.....	39
Shifts in corn production.....	39
Shifts in hog production.....	41
Trend in receipts of livestock at the more important public markets.....	44

Chapter 2—Continued.

	Page
Trend of hog receipts at individual public markets in relation to direct marketing.....	46
Chicago.....	47
Kansas City.....	48
Omaha.....	49
East St. Louis (National Stockyards, Ill.).....	50
St. Joseph.....	51
South St. Paul.....	51
Sioux City.....	51
Denver and Fort Worth.....	52
Relationship of direct marketing to the business of the public-market agencies.....	52
Direct marketing in relation to cooperative livestock shipping associations.....	53
Trends and shifts in wholesale slaughter of hogs.....	57
Eastern Corn Belt States.....	58
Southwestern Corn Belt States.....	59
Northwestern Corn Belt States.....	59
Changes in hog slaughter by types of packers.....	59
Interior plants and public-markets plants.....	59
The four national packing companies.....	61
Relation of hog slaughter of four national packing companies to United States total of federally inspected slaughter.....	62
Shifts in numbers of hogs slaughtered by the smaller packers.....	65
Trends and changes in hog-buying operations.....	66
Four national packers.....	66
Small packers.....	69
Comparison of direct purchases and public-market purchases of hogs by the national packing companies and the other packers.....	70
Developments contributing to the recent growth of direct marketing.....	70
Chapter 3. Relation of transportation to direct marketing.....	74
Transit privileges as related to direct marketing.....	74
Motor-truck transportation and direct marketing.....	77
Relationships between freight rates on hogs and on hog products.....	78
Freight rates on hogs and hog products.....	78
Differences in freight rates per ton-mile.....	85
Effects of freight rates and freight-rate relationships on the direct marketing of hogs.....	87
Chapter 4. Relation of differences in wage costs in the packing industry to direct marketing.....	88
Differences in wages per worker.....	89
Differences in wage costs per 100 pounds dressed weight of livestock slaughtered.....	90
Differences in earnings per hour.....	91
Effect of differences in wage costs on interior packing.....	92
Chapter 5. Types of markets for hogs: Market agencies, their functions, methods, and practices.....	93
Public markets.....	95
Public-market agencies.....	95
Stockyard companies.....	95
Livestock commission firms.....	95
Order buyers.....	95
Yard traders.....	95
Livestock exchanges.....	95
Public-market practices.....	96
Feeding, watering, and "fill".....	96
Sorting and grading.....	96
Pricing, buying, and selling practices and charges.....	96
Public-market charges.....	97
Concentration yards.....	97
Direct marketing facilitated by concentration yards.....	97
Pricing and purchasing hogs at concentration yards.....	98
Receiving hours at concentration yards.....	99

Chapter 5—Continued.	Page
Packers who buy direct.....	99
Means of obtaining supplies direct.....	99
Grading by packers who buy direct.....	99
Announcing and changing prices.....	100
Settlement for hogs bought direct.....	100
The "board price" and the "add".....	100
Use of the "add".....	101
Comparison of direct markets and public markets.....	101
Auction markets.....	102
Auction-market methods.....	102
Local livestock dealers.....	103
Local dealers and direct marketing.....	103
Docking.....	103
Scales and weighing.....	104
Farmers' opinions regarding weighing.....	105
Types of markets used by farmers.....	105
Reasons for market preferences.....	106
The Packers and Stockyards Act and direct marketing.....	107
Chapter 6. Grade standards and market news.....	108
Variations in classifications of hogs.....	108
Use of classifications.....	108
Lack of comparability among classifications.....	108
Basis for single set of standards for hogs.....	109
Farmers' opinions regarding sorting and grading of hogs.....	109
Methods and frequency of obtaining livestock market information.....	110
Desirability of comparable classifications.....	112
Standardized market information as an aid in marketing.....	113
Federal market news in direct-marketing areas.....	114
Chapter 7. Factors affecting hog prices.....	115
Important characteristics of the market for hogs and hog products.....	115
How hog prices are determined.....	116
Conditions of supply and demand for hogs and hog products.....	118
Possible ways in which growth of direct marketing might have affected hog prices.....	121
Factors affecting retail prices of hog products.....	122
Relation of retail and wholesale prices of hog products to hog prices.....	125
Changes in hog prices and retail prices of hog products.....	125
Changes in hog prices and wholesale prices of hog products.....	127
Factors affecting the spread between hog prices and wholesale and retail values of hog products.....	129
Increases in processing and distributive charges.....	129
Relative importance of certain expense items in charges for proc- essing and distribution.....	131
Changes in spread between prices of other farm products and retail prices of products derived therefrom.....	134
Effect of growth of direct marketing on the spread between hog prices and retail and wholesale values of hog products.....	137
Chapter 8. Competition for hogs.....	139
How the price level of hogs is determined.....	139
Different series of hog prices.....	139
Nature of packer competition.....	140
Two basic assumptions.....	140
Factors influencing packers' buying policies.....	141
Extent of competition.....	141
Public markets as price registering points.....	142
Price determination of other products.....	142
Butterfat.....	142
Poultry.....	143
Value of public livestock markets.....	143
Effect of changes in marketing methods on hog prices.....	144
Three important changes in methods.....	144
Motor-truck transportation.....	144
Local auction markets.....	145
Growth of direct marketing.....	145
Character of competition at public markets.....	146
Competition for hogs at Chicago public market.....	147
Position of salesmen in the market.....	148

	Page
Chapter 8—Continued.	
Effect of changes in marketing methods on hog prices—Continued.	
Competition for hogs bought direct.....	149
Types of large-scale country buying.....	150
Evidences of competition at country buying points.....	150
Competition at country points.....	152
Alternative selling methods.....	152
Factors influencing farmers' choice of outlets.....	153
Changes in number of local outlets.....	154
Number of all market outlets.....	155
Chapter 9. Hog-price differentials between markets and relationships	
between receipts and prices at different markets.....	158
Trend in hog-price relationships between markets.....	159
Seasonal variation of price relationships.....	160
Day-to-day price relationships.....	161
Frequency of change in price differentials between markets.....	163
Magnitude of day-to-day change in price differentials between	
markets.....	170
Behavior of prices at interior markets when prices at public mar-	
kets declined as compared with when they advanced.....	172
Sequence of price movements between Chicago and interior mar-	
kets in Iowa and southern Minnesota.....	175
General conclusions regarding day-to-day price relationships....	177
Hog receipts and prices at Chicago and at interior markets by days of	
the week.....	178
Chapter 10. Effect of direct marketing on the quality of hogs at public	
markets.....	183
Proportions of hogs of different classes and grades at various types of	
markets.....	183
Grades of hogs received at Chicago direct and for sale on the public	
market.....	184
Grades of hogs at public markets and at other types of markets....	185
Chapter 11. Cost of marketing hogs direct and at public markets.....	187
Expense of selling hogs direct.....	187
Cost of assembling hogs locally.....	188
Cost of operating concentration yards.....	188
Public-market charges for handling and selling hogs.....	191
Shrinkage in transit in relation to direct marketing.....	195
Chapter 12. Relative prices paid for hogs bought direct and at public	
markets.....	198
Comparative returns to producers.....	201
Literature cited.....	202
Appendix.....	203
Tables 44-66.....	203-222
The Packers and Stockyards Act and direct marketing.....	222
Hog classifications and nomenclature at various types of markets....	223
Forms.....	228-230

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THE DIRECT MARKETING OF HOGS

(Prepared in the Bureau of Agricultural Economics)

FOREWORD

The marked expansion in the direct marketing of hogs in the last decade gave rise to a number of troublesome questions and problems to which the Bureau of Agricultural Economics for some time has been giving attention. These questions took on added importance in connection with programs considered under the Agricultural Adjustment Act and the Secretary of Agriculture requested that the study be completed as soon as possible. Additional funds for this purpose were provided by the Agricultural Adjustment Administration, and the research staff of the Bureau was augmented with specialists made available through the courtesy of State agricultural colleges in the leading hog-producing States. Generous cooperation was received throughout the study from various types of marketing agencies, slaughterers, and producers.

The study shows that the development of direct marketing of hogs is associated with the expansion and shifts in the areas of corn and hog production and with the decentralization of the packing industry. Its growth has been facilitated by the extension of good roads and the rise of motor transportation as well as by more favorable freight rates on hog products than on live hogs. The lower labor costs usually found in smaller cities and towns also have contributed to the decentralization of the packing industry and to the growth of direct marketing.

Direct marketing has not lowered the general level of hog prices, nor has it operated to reduce returns to producers. The sharp decline in hog prices in recent years was due to the drastic reduction in consumer income associated with the decline in the general price level, and to reduced foreign demand for American hog products. It has not reduced competition for hogs. There are no fixed price differences between public markets and interior points. A rise or decline in hog prices is at least as likely to occur first at interior points as at public markets. Direct marketing has not increased marketing costs nor widened the margins between prices of hogs and prices of hog products, nor has it deprived public markets of supplies of the various qualities of hogs sufficient for registering prices for the different grades. In general, the study shows that direct marketing has not operated to the disadvantage of hog producers. It does point

out, however, that direct marketing has substantially reduced the number of hogs received for sale at public markets which has adversely affected the interests of stockyard operators and market agencies at some public markets.

While there are some regional and local differences, they are matters of degree and do not alter the main conclusions.

While the conclusion is thus reached that direct marketing does not operate to the disadvantage of producers, the study does show that some practices in hog marketing generally should be corrected and that additional services should be provided. Recommendations covering these points are contained in the following report.

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Chief, Bureau of Agricultural Economics.

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Direct marketing of hogs, or of any other class of livestock, for slaughter, is sale to slaughterers at places other than recognized public-stockyard markets where generally the services of livestock commission agents are utilized by the sellers and where the privilege of trading in livestock is equally available to all who wish to buy or sell. Direct sales may be made to the slaughterer or his agent in the localities where the livestock is produced, at some point not recognized as a public market, or the sale may be made on delivery to the slaughtering place. The term "direct marketing" also applies to the movement of stockers, feeders, and breeding stock, with transfer of ownership through sale other than at public stockyards. This study, however, deals primarily with the direct marketing of slaughter hogs.

This method of marketing for commercial slaughter is as old as hog marketing itself and is much older than public stockyards. In recent years it has grown rapidly, direct purchases of hogs having increased from 12,802,000 hogs, or 24 percent of the total of federally inspected slaughter in 1923, to 20,708,000, or 44 percent of the total in 1933. Meanwhile, the number of cattle sold direct increased from 10 percent to 17 percent of the total slaughtered under Federal inspection, calves from 14 to 26 percent, and sheep and lambs from 15 to 21 percent. Slaughter under Federal inspection, it should be noted, represents a large part of all slaughter. It represented nearly 64 percent of all hogs slaughtered in 1933, 61 percent of cattle and calves, and 80 percent of sheep and lambs.

One result of the growth of direct marketing is that an increased volume of hogs moving from producer to slaughter is diverted from public markets instead of going through them, thus causing a decline in the volume of business at these markets. It is apparent, especially with respect to some public markets, that this tends to reduce the profits and impair the investment in plant, equipment, and trained personnel of public stockyards, some of which have served, and have been an important part of, the livestock industry of this country for more than half a century.

The growth of direct marketing has raised a number of questions of wide importance to packers, owners of public stockyards, commis-

sion men, and others interested in livestock marketing, and especially to hog producers. Among these are the following:

Are hogs of higher quality bought direct, and are those of lower quality shipped to public markets? If so, does the lower average price of the latter establish the price at which the better hogs are bought direct? Has the level of hog prices been reduced by the increase in direct marketing?

Is competition effective among buyers? The term "effective competition" is here assumed to mean that individual buyers, in order to get the requisite volume of hogs for slaughter, are obliged to pay the producer a price substantially as high as justified by the level of prices at which hog products can be sold, and that this price to the producer would be at least as favorable as the price he would get, after deducting transportation costs, yardage, fees, commissions, and other charges, as a result of the competition that would prevail among slaughterers, if public-market packers bought substantially all their hogs at public markets.

Another important question is whether direct marketing weakens competition at public markets and depresses the level of hog prices at these markets, and thereby results in lower prices to producers both for the hogs that are sold direct and for those sold at public markets.

THE GROWTH OF DIRECT MARKETING

The significance of recent developments and present trends in direct marketing can perhaps be studied to best advantage against the background of historical change, especially those changes that are related to and are parts of the economic development of the country, and particularly of its livestock industry. These changes in marketing must also be considered in relation to such factors as transportation facilities and rates, accessibility of slaughtering and meat-distributing centers to producing areas, shifts in areas of principal production and their distance from the main centers of consumption, and relative advantages of rival processors and of competing distributors seeking to operate their respective businesses as profitably as possible.

The "drover" and the early slaughtering plants.—Before the development of railroads, livestock was usually driven to market or place of slaughter. If the producer found the distance too great, or his animals for sale too few in number, or the risk of "driving" them too big, he ordinarily could sell them to a "drover." The drover's functions and services were gradually modified with changing conditions, until today his nearest counterpart is found in the local buyer. This and other methods of livestock marketing in common use before the Civil War constituted "direct marketing" within the now-common meaning of this term.

As the distance over which livestock could be moved on foot advantageously was necessarily limited, slaughtering plants were established in most of the trading centers in or near the principal areas of livestock production. In a sense, the counterpart of these plants today is found in the "local packers." Certain centers, Cincinnati for example, that were especially well located with respect to river transportation and centers of livestock production, soon ceased to be strictly local and became important packing centers.

Railroad transportation and the rise of large livestock centers.—As railroad transportation came into extensive use about 1850 for the movement of livestock, a fundamental change took place in organization and channels of livestock marketing. Important centers developed for transportation, trade, and industry of many kinds, and, among these, the business of slaughter and trade in livestock. These centers also became important in banking and credit, wholesale distribution, recording of prices and market movements, and dissemination of trade information—all of which were necessary functions in the expanding livestock industry.

The handling of rapidly growing numbers of live animals for packing plants at these centers required business organization, physical facilities, and trained personnel, on a scale beyond that of any center in earlier years. Enterprising business men set about to meet these requirements. Hence, the establishment of the Chicago public stockyards, which began operation in 1865, those of Kansas City, in 1871, those in Sioux City, in 1884, and most of the other principal public markets before 1900. Since that year many others have been organized until there are now 100 listed public stockyards, but more than half of these centers are relatively small in point of number of livestock handled.

Along with the rise of public-market packers and public stockyards, another market agency came into prominence—the commission agency, the primary function of which is to serve as agent for the livestock shipper in effecting the sale of his stock, or to act as purchasing agent for those who wish to buy at the public markets.

Continued importance of the small packers.—Even with their great size and dominant influence, the large livestock and meat-packing centers by no means had the whole field to themselves. For example, in the decade 1860–69, before records show packing operations in Sioux City, an annual average of 213,000 hogs was slaughtered (commercially) in Iowa; and in the first decade (1890–99), after the decade in which the Sioux City public market began operation (1884), of the 1,548,000 hogs slaughtered in Iowa 79 percent were slaughtered outside of Sioux City. The further fact that 65 percent of Iowa's slaughter in 1920–29, and nearly 75 percent in 1930–33, were slaughtered outside of Sioux City is at least indicative of the fact that the "smaller" centers and the "local" packers have throughout played a large part in the hog-slaughtering industry in that State.

A similar situation, but perhaps of lesser extent, has prevailed in other parts of the Corn Belt, indicating that in both the handling and the processing of hogs the large stockyards and the packing plants at public-market centers have had, throughout their history, a substantial amount of competition from the smaller marketing agencies and packing plants located near, or within, the principal areas of hog production.

Early beginning, but recent problem-status of direct marketing.—The "local" or interior packers not only handled in the aggregate a considerable part of the commercial slaughter of hogs over many years but for the most part they have obtained their supply of hogs by direct purchase since the very beginning of commercial slaughter. Yet direct marketing of hogs did not become a matter of market controversy and public concern until after the large packers, whose principal plants are located at or near the public stockyards,

began about a decade ago to get a substantial part of their supply of hogs for those plants by direct purchase in the hog-producing areas, principally in the western part of the Corn Belt. The direct purchases of hogs by packers increased from 12,802,000 head in 1923 to 20,708,000 in 1933, or from 24 percent to nearly 44 percent of federally inspected slaughter in those years. There was a substantial increase in direct purchasing of cattle and calves, and of sheep and lambs, but not nearly so great as occurred in the direct buying of hogs.

REASONS FOR INCREASED DIRECT MARKETING IN RECENT YEARS

The principal reasons for the rapid increase in direct marketing of hogs in recent years may be found in the competitive situation as between local or interior packers on the one hand and public-market packers on the other, associated with the expansion of corn and hog production in the western Corn Belt. The chief reasons for this competitive situation are found in the transportation developments, both rail and motor truck, as they affect convenience and costs of moving livestock direct and through public markets and of transporting live animals as compared with livestock products; in comparative labor costs among packers in different areas; in differences between direct and public-market channels with respect to costs of marketing including shrinkage, commission charges, yardage fees, and other marketing costs; and in producer preferences, which play a part in the farmer's choice of market outlet.

The general trend of corn acreage in the United States from 1909 to 1933 showed no significant change, averaging about 101,500,000 acres. Material variation from this average occurred in certain years. The most significant change in corn production in this period was the rapid expansion in the five States comprising the northwestern Corn Belt, where acreage increased from about 21,600,000 acres in 1908 to 34,000,000 in 1932, an increase of 60 percent. An important decrease took place in Missouri and Kansas and in the eastern Corn Belt. Some decrease also occurred in certain areas outside of the Corn Belt. As shifts in corn production for the most part result in similar shifts in hog production, the rapid expansion in both, in the northwestern Corn Belt, is of direct significance in relation to interior slaughter in that area and is indirectly important with respect to the growth of direct marketing.

TRANSPORTATION AND DIRECT MARKETING

Direct marketing has been facilitated by certain conditions in the transportation situation, especially with respect to truck transportation, railroad concentration privileges, and comparative freight charges on hogs and hog products.

Truck transportation.—The development of motor-truck transportation has contributed to the growth of direct marketing by making interior packing plants and concentration yards conveniently available to a much larger number of producers than would be the case if hogs were transported by rail. Truck transportation appears to be best adapted to comparatively short hauls, and this is relatively more advantageous to concentration yards and local packing plants, which are usually nearer the source of supply than to the public

markets and public-market packers. The information at hand indicates that in recent years more than 50 percent of the hogs received at interior packing plants and concentration yards were moved by truck. Since trucks are more economical and convenient for short distances than for longer hauls, their increased use has encouraged the development of concentration points and stimulated movement of hogs direct from farms to concentration yards and interior packing plants, most of which are located closer to producers than are the public markets.

Railroad concentration privileges.—Transit privileges, especially concentration privileges, have enabled public-market packers to buy hogs at local points for shipment direct to their plants at public-market points more advantageously than if these transit privileges were not available. Under existing market practices, this tends to aid public-market packers in their competition with interior packers through direct purchases of hogs. These privileges are likewise available to persons operating through the public markets, but thus far apparently they have not been in a position to make much use of these concentration privileges.

In the area west of the Mississippi River, the freight-rate structure includes concentration privileges which permit changes in the make-up and ownership of the shipment of hogs at points between origin and destination, and at the same time allows the through rate from original loading point. The number of concentration yards in the western Corn Belt has increased from 19 in 1920 to 195 in 1933. Concentration yards provide facilities near the source of supply where hogs of different kinds can be bought, assembled, and sorted, and then re-shipped with more economical loading on the basis of the through rate from original shipping point to destination.

The freight-rate advantage derived from concentration privileges may be illustrated by considering a single-deck shipment of hogs from Granville, Iowa, destined to Chicago and stopped at Cedar Rapids for concentration. The hogs move on the local rate to Cedar Rapids, where they may be sold and the make-up of the shipment changed before shipment to Chicago. The charge for the shipment from Cedar Rapids to Chicago, however, is the difference between the local rate from Granville to Cedar Rapids and the effective through rate from Granville to Chicago. Hence the hogs are moved in this manner from Granville to Chicago at the through car-lot rate between these points. If it were not for concentration arrangements, it would be necessary for the shipper to pay the effective local rates from Granville to Cedar Rapids and from Cedar Rapids to Chicago, if the shipment were stopped en route, rather than the through rate from Granville to Chicago. This through rate is about 21 cents per hundred pounds less than the two local rates combined.

Comparative freight charges on hogs and hog products.—The relationship of freight rates among regions and between hogs and hog products has become an important factor in the growth of direct marketing in that the relationship has been and is relatively favorable for packers whose plants are in the western Corn Belt. Interior packers in this area usually purchase most of their hogs direct. In the entire period since 1910, freight charges on shipments from the western Corn Belt eastward have been greater for a given weight of live hogs than for the products derived therefrom. Also the margin

between the freight charge on hogs and that on hog products widened somewhat after the pre-war period. For example, in the years from 1925 to 1929, the freight charge on 100 pounds of live hog from Des Moines to New York was about 25 cents greater than the freight charge on the hog products obtained from 100 pounds of hog, whereas in the years from 1910 to 1914 it was about 19 cents higher.

Partly because freight rates in this country generally do not increase proportionately with distance, and partly because of relatively low rates on hog products from the northwestern Corn Belt, particularly interior Iowa points, to the Mississippi River, the freight charge per ton-mile on eastern movements of hog products from the western Corn Belt is lower than the freight charge per ton-mile on similar movements from the region east of the Mississippi River. As a result of these lower freight charges per ton-mile and the proximity of the packers in the western Corn Belt to the surplus hog supply, these packers have certain competitive advantages in supplying eastern markets with hog products, as compared with packers who are located in the east or intermediate between the western Corn Belt and the east and who buy hogs from the western surplus areas. Such advantages contributed to the increase in hog slaughter in certain areas west of the Mississippi River.

Specific differences in freight rates are numerous and complex. In Official Territory, that is from Chicago and Mississippi River points east and from the Ohio and Potomac Rivers north, rates on fresh pork per 100 pounds are higher than rates on the same weight of hogs, while rates on cured pork and lard per 100 pounds are about the same as on 100 pounds of hogs.

In Western Trunk Line Territory, from interior Iowa points to Chicago, the freight rate per 100 pounds on fresh pork is the same as for 100 pounds of cured pork, and considerably lower than the rate on live hogs. The result is that hog products obtained from 100 pounds of hogs can be moved from Des Moines to Chicago for about one-half as much as the rate per 100 pounds on hogs. In the same territory the freight charge on hog products from Omaha to Chicago is 62 percent of the rate per 100 pounds on hogs. In the official territory, however, from Chicago to New York for example, the charge for hog products obtained from 100 pounds of hogs equals 82 percent of the rate per 100 pounds of hogs. Through rates from interior Iowa points to points east of Chicago also reflect the relatively low rates on products from these points to Chicago and the Mississippi River.

On the other hand, on all movement of hogs and hog products from the Corn Belt westward, the rate on live hogs per 100 pounds is less than half the rate on fresh and cured pork and on lard per 100 pounds. The freight charge from Omaha to San Francisco on the hog products obtained from 100 pounds of hogs is 58 percent greater than the rate on live hogs per 100 pounds. This encourages the shipment of live hogs instead of hog products to the Pacific coast.

Freight charges, however, are only one of the cost factors involved in the processing and distribution of hogs and hog products. Several factors in addition to transportation charges, such as the growth of hog production in the western Corn Belt, which itself may have been influenced in part by the freight-rate structure, have been favorable for the expansion of the packing industry in that area.

WAGE COSTS AND DIRECT MARKETING

A comparison of wages in the packing industry since 1914 shows that wage costs have been materially lower in the States where the interior packing industry is relatively more concentrated, as compared with those in the States where plants located at public markets are of predominating importance in the total slaughter. Moreover, the difference in wage costs increased in the period of rapid expansion in the interior packing industry and in direct marketing. These comparisons of wage costs are particularly striking as between Iowa, where most packing plants are located at interior points, and Illinois, where most of the packing operations are conducted at public-market points. It appears, therefore, that differences in wage costs, like differences noted in transportation charges, have directly favored the growth of interior packing and thus indirectly encouraged direct marketing.

COST TO PACKERS OF HOGS BOUGHT DIRECT AND AT PUBLIC MARKETS

As packers at all times no doubt endeavor to sell their hog products for as much as possible and to buy their required supply of live hogs as cheaply as possible, it follows that comparative costs to them of hogs bought direct and at public markets have an important bearing on the growth of direct marketing. Comparative returns to producers for hogs sold through these channels also have a bearing on its growth.

Cost of hogs bought direct consists of the price paid at the point of purchase and the cost of getting the hogs from that point to the slaughtering plant. Cost of hogs bought at public markets consists of the price paid at the market plus the costs of buying and of transferring them to the plant. Returns to the producer consist of the price he gets at the point of sale, less transportation and marketing charges, if any, to that point.

Findings from cost records on 673,300 hogs.—Detailed cost records were obtained covering 673,300 hogs bought by packers who get their supply both direct and at public markets. The average cost to packers of hogs of the more desirable butcher weights was greater when bought direct than when purchased at public markets. Although lightweight, unfinished hogs and heavy packing sows cost on an average somewhat less when bought direct than when bought at public markets, the average cost of all hogs bought direct was higher.

WHY PUBLIC-MARKET PACKERS INCREASED DIRECT BUYING

The somewhat higher cost of hogs bought direct by public-market packers than of hogs bought by them at public markets suggests that factors other than the relative cost of hogs were taken into consideration in their buying operations. These factors are indicated partly by statistical evidence and partly by general reasoning based upon trends in the livestock industry during the period of rapid increase in direct marketing.

Slaughter of hogs under Federal inspection reached an all-time peak of about 53,000,000 head in 1923 and 1924. Largely because of the low price which resulted from this huge volume, hog production and slaughter declined sharply in the following 2 years. This decrease, however, was not distributed proportionately among all packers but occurred very largely at the plants located at public-

market points, with very little decline in slaughter operations of the interior packers.

This created, for the public-market packers located at some market points, a serious business problem, arising not only from a large loss in actual volume of operations but also because of a loss in their relative position in the packing industry.

The public-market packers had apparently three possibilities of increasing their actual and maintaining their relative volume of operation. One way was to bid up the price of hogs at some public markets, particularly at Chicago, in an effort to attract a relatively larger volume to these points. This, as a practical business matter, had important limitations. To have done so would have meant bidding up the price of hogs arriving at these markets from areas other than those where interior packer competition was important. This, however, would not have improved the competitive position of the public-market packers unless they could have operated on margins that were smaller than those of the interior packers or sell their product at higher prices than those obtained by the latter group. Had the packers attempted to attract a larger volume of hogs to some public-market points, Chicago for example, it is not at all certain that they would have been able to accomplish this purpose since the competitive advantages under which interior packers operate probably would still have enabled them to maintain or even to increase their operations.

The second possibility open to the public-market packer was that of acquiring or building interior plants in the northwestern Corn Belt and expanding operations at plants already owned in that area, and thus meeting the interior packer on his own ground. Although this was done to a considerable extent, it could not entirely solve the problem since there were still the plants at public-market points to be operated. So long as these plants were operated at all, they had to be operated at a fairly economical capacity, and they were too valuable to be abandoned and replaced with corresponding capacity at interior points. Hence, the third possibility was to buy hogs direct in the territory of the interior packers for shipment to the public-market plants. This course was followed extensively, as is shown by the figures on market movements and slaughter.

Slaughter by public-market packers whose plants were at market points in the eastern Corn Belt declined 5,800,000 head from 1924 to 1926, or 33 percent. Public-market packers in the southwestern Corn Belt lost nearly 2,500,000 head, or 41 percent; those in the northwestern Corn Belt 1,700,000, or 21 percent, making a total loss to public-market packers in the Corn Belt as a whole of nearly 10,000,000 head, or 31 percent.

Meanwhile, that is from 1924 to 1926, the slaughter of interior packers in the eastern Corn Belt declined 200,000 head, or 12 percent, and that of the interior packers in the southwestern Corn Belt declined nearly 500,000 head, or 21 percent. But during this period of reduction in hog slaughter, both by public-market packers and by some interior packers, the interior packers in the northwestern Corn Belt actually increased their operations, although the increase was not large. The significant fact is that interior packers in that area more than held their own despite the large decrease in total slaughter.

To meet their loss in volume, both relative and actual, in the face of increasing operations of interior packers in the northwestern Corn Belt, the public-market packers resorted to direct buying as a means of competing with the interior-market packers in their own territory. This is shown by the different trends in volume of hogs received direct at Chicago and volume consigned for sale at the Chicago public market. The total of all hogs received at Chicago, both for sale and direct, decreased from 9,400,000 in 1928 to 7,400,000 in 1932. The number of hogs consigned for sale at the Chicago public market declined from 7,600,000 in 1928 to 4,300,000 in 1932, a decline of 43 percent, while direct receipts increased from 1,800,000 to 3,100,000 an increase of 72 percent. In 1933, there was an increase of about 18 percent in total receipts at Chicago but the number of hogs consigned for sale (which included nearly 1,000,000 sows and pigs sold to the Government in connection with the Federal emergency hog reduction program) increased only 8 percent and was only about 60 percent as large as the number consigned for sale in 1928.

From 1926 to 1933, the slaughter at interior plants in Iowa continued to increase each year regardless of cyclical changes in hog production. The increase was from 2,800,000 head in 1926 to 4,700,000 in 1933. This is representative of the trend in interior slaughter in the northwestern Corn Belt as a whole and is of special significance when considered in relation to the increase in the direct receipts by packers at Chicago.

That the increase in direct buying during the last 5 or 6 years was stimulated by a competitive situation that caused a sharp decline in receipts of hogs consigned to some public markets for sale is further suggested by the fact that this decline preceded the marked increase in volume of direct purchases by public-market packers.

COST OF MARKETING HOGS DIRECT AND AT PUBLIC MARKETS

The relative price paid for hogs at different markets, as already suggested, is not in itself a conclusive indication of relative net returns to producers from hogs sold direct and at public markets. The costs incurred in marketing through either method must be deducted from the cost of hogs to packers. Hence special attention was given in this study to cost of marketing hogs direct and at public markets.

The establishment of a large number of concentration yards and of additional interior packing plants undoubtedly has enlarged the total investment in marketing facilities and has tended to increase the number of persons engaged in the movement of hogs from farms to consumers. Although this development involved some duplication of existing facilities, the physical capacity of which was already adequate, it would not necessarily add to the total costs of marketing unless the total charges of the earlier established facilities were not reduced and the charges of those later established added to this total. This, however, is not the case. The growth of the new facilities has reduced both the volume of business and the gross revenue of many of the older establishments, since these have not increased their unit charges to compensate for reduced volume. Hence the question of whether total marketing costs have been increased or decreased depends largely upon the relative costs of the old method as compared with those of the new.

Costs at concentration yards.—If the farmer sells at a privately owned concentration yard, from which place the hogs are in turn sold "direct" to a packer, the concentration yard performs the same function as a local dealer who assembles hogs. Private dealers or truckers may, on the other hand, buy from farmers and in turn sell at concentration yards, from which place the hogs are moved direct to a packer. The concentration yard, in this case, represents an additional link in the marketing chain, if the hogs otherwise would have been sold by the local dealer direct to the packer. The operating margin taken by the concentration yard on such transactions represents an added cost in marketing, except as the concentration yard may perform some specific functions such as assembling in volume which permits more advantageous sorting and selling, more economical loading, etc. On the other hand, if the dealer who assembled the hogs locally had sold them at a public market, the concentration yard to an important extent would have taken the place of such market. If the concentration yard is owned by a packer, hogs are bought by him there instead of at a public market. The cost of selling at public markets is substantially higher than the margin taken by operators of concentration yards, and these costs must be deducted from the proceeds of the hogs before remittance is made to the seller.

Costs at public markets.—The costs of feeding, the selling commission, yardage, and other incidentals at important markets in the Corn Belt for the period 1931-33 were found to average about 20 cents per hundredweight, varying among individual markets from 19 cents to 23 cents. In the same period the average cost of operating concentration yards was about 8 cents per hundredweight, varying from 2.6 cents to 27.7 cents for individual concentration yards. The cost of handling hogs locally by cooperative livestock shipping associations and local dealers in the Corn Belt averaged about the same as for the concentration yards.

The route from producer to packer is on an average shorter and the cost of handling is usually less when hogs are sold direct than when sold through public markets. Although hogs sold direct for slaughter at a public-market plant are shipped substantially the same distance as if they were consigned for sale at the public market, their movement is more direct in the sense that they usually pass through fewer hands. Hogs sold direct to interior packers are as a rule shipped over much shorter distance than are hogs sold at public markets. When hogs are sold and delivered by producers themselves at the packing plant, no costs are deducted for marketing. If the farmer sells the hogs to a local dealer or trucker the handling charges must be deducted from the price paid by the packer. These charges are substantially the same whether the hogs are sold direct or at a public market.

Shrinkage.—Shrinkage may be due to excretions or to loss in tissue weight. Tissue shrinkage represents a marketing cost, but excretory shrinkage does not. Tissue shrinkage in transit represents a marketing cost which tends to vary directly, but not in proportion, to the time hogs are in transit and until slaughtered. It appears that tissue shrinkage begins early in the period in transit and continues until hogs are slaughtered. The rate at which tissue shrinks tends to be greater during the earlier transit period. The rate of tissue shrinkage is higher for hogs of light weight than for hogs of heavy weight. To

keep tissue shrinkage at a minimum, hogs should be moved from the farm to the slaughtering plant in the shortest possible time.

Comparative returns to producers.—As hogs bought direct cost packers somewhat more than hogs bought at public markets and as it is found that the cost of marketing hogs direct is less than through public stockyards, it follows that on the whole producers realize more on hogs marketed direct.

Somewhat higher returns to producers for hogs sold direct are also suggested by the results of certain studies of the records of livestock shipping associations made by State marketing specialists and others. These data are not conclusive, because they do not cover broadly the field of direct selling.

PRODUCERS' PREFERENCES

A questionnaire pertaining to direct marketing was mailed to 68,900 producers of hogs in 15 States, and replies were received from nearly 12,500.

The preferences expressed by producers for different types of market outlets are of interest in connection with the increased sale of hogs direct, especially in the past decade. Of 10,500 expressions of producer preference, 36 percent favored public stockyards, 23 percent preferred selling to local buyers, 11 percent to packing plants, 21 percent through cooperative shipping associations, and about 3 percent to concentration yards and buying stations, and the same percentage preferred selling at auctions. Only 3 percent of those answering this question reported that they had no preference. It should not be assumed, however, that these percentages do, or ought to, measure the exact preferences of producers as between marketing direct or at public markets, since 44 percent of the reporting producers expressed preference for marketing agencies that consign a part of their hogs to public markets and sell a part direct.

The reason most frequently given for preferring a specified market outlet was, naturally enough, that "returns are better." This answer might have been due to the belief that prices received were higher or selling expense lower, or both, on sales through the favored market channel. This reason—"better returns"—was given by nearly two-thirds of the farmers who favored direct sale to packing plants and by one-fourth of those who favored public stockyards. Of those who gave the latter preference, 36 percent cited "more competition" as their reason, and this reason was also given by 20 percent of those who favored auctions.

Local dealers, packing plants, and concentration yards, in the order named, were judged by the reporting producers as "the most convenient." The greater convenience, they said, lay in the fact that hogs could be moved by truck to these markets, that the seller knew the price in advance, and that the shrinkage was less. Other reasons, given by many for selling through channels other than public stockyards, were "small lots sold to better advantage", "better service", and possibility of "control of sales and price." Of those who favored public markets, 4 percent gave as reason their own opposition to direct marketing.

DIRECT MARKETING IN RELATION TO PRICES OF HOGS, COMPETITION, AND MARKET DIFFERENTIALS

The summary points thus far presented suggest three principal conclusions: (1) That certain fundamental factors related to location of the principal areas of hog production and to the development of truck transportation, freight rates, transit privileges, etc., have helped to strengthen the competitive position of "interior" packers as against public-market packers, (2) that the latter have been induced to enter the fields of direct buying and of slaughter in the interior, not only under competition from interior packers for hogs, but also because costs of moving hogs from local points to packing plants at public-market centers on the whole is less through direct channels than through public stockyards and commission agencies because the cost of shipping the products is less than that of moving live animals and because of lower labor costs in the interior packing industry, and (3) that at a given general level of hog prices, the producers appear to get at least as much, and perhaps somewhat more, for hogs sold direct than for those sold at public markets.

These conclusions, however, do not apply directly to the issue of whether direct buying weakens the price-recording function of public markets; nor have they answered the question as to whether direct marketing causes a lower level of prices than would otherwise have prevailed at public markets where a part of the packer's supply is bought and, in turn, gives an opportunity for similar price decline at interior points where he gets the remainder of his hogs. In short, the above conclusions do not answer the question: Has the increase in direct marketing caused prices to be lower than they otherwise would have been?

These basic issues call for a consideration of such questions as these: What, after all, determines the level of hog prices? Is competition among slaughterers and marketing agencies effective enough to cause them to pay a price to the producer that reflects substantially the level of prices they receive for hog products? Have margins between prices of live hogs and prices of hog products at wholesale and retail in recent years widened at such times and in a manner suggesting that the widening may have been due to the rapid growth of direct marketing?

FACTORS DETERMINING HOG PRICES

The chief factors causing hog prices to change in this country during the last 20 years have been: (1) Changes in the buying power of domestic consumers, (2) variations in hog production, (3) changes in the charges for processing and distribution, and (4) changes in foreign demand for American hog products. Statistical evidence indicates that changes in hog prices in recent years have been due to causes other than changes in marketing methods including the rapid growth of direct marketing.

Buying power of domestic consumers.—The demand for hog products is highly competitive, as the consumers are numerous, their actual requirements variable for pork and other meats, and the possibilities many for substituting one kind of meat for another in the diet. Hog production, likewise, is highly competitive, for hog producers are

numerous and the volume of production is variable in response to several factors, especially the quantity and price of feed and the market price of hogs. Whatever the quantity of hogs produced for market, it must be disposed of at a price within a comparatively short period. The retail and wholesale markets, where hog products are sold for domestic consumption and export, are the meeting place of the forces of supply and demand in establishing the level of prices.

Changes in the aggregate retail value of hog products consumed in this country are closely related to the changes in the level of incomes of consumers. In periods of relatively stable consumer income, this retail value has tended to be about the same whether the quantity of hog products consumed was large or small. In other words, at a given level of demand, a decrease or an increase in the quantity of hog products sold has resulted in about a corresponding rise or fall in composite retail prices.

Export demand for hog products.—The value of hog products exported is affected chiefly by consumer purchasing power in importing countries, the quantity of domestic exports of hog products, and the volume of foreign-produced supplies in foreign markets. The quantity of domestic exports depends chiefly upon the volume of hog production in this country and abroad, and upon the various governmental restrictions on imports of hog products. Such restrictions have been of increasing importance during the last 3 years.

Influence of charges for processing and distribution.—The total amount paid for hogs over a period as long as a marketing season depends largely on what is left of the retail value of hog products consumed after deductions for aggregate charges for processing and distribution. The level of retail prices of hog products for any period represents the total retail value of hog products consumed, divided by the quantity consumed of such products. Since changes in incomes of consumers largely determine the changes in the aggregate retail value of hog products, retail prices of these products are affected chiefly by the level of incomes of consumers and the quantity of hog products consumed.

During the last 20 years a material increase in processing and distributing charges has occurred and the spread between prices of hogs and retail prices of principal hog products has widened materially. Most of the increase in this spread occurred from 1917 to 1921, but the spread continued wide from 1922 to 1931. In 1932 and 1933 the spread declined considerably, but in both of these years retail prices of hog products were still much higher relative to their pre-war level than were hog prices and the spread between hog prices and hog-product values was much greater than prior to the World War.

Influence of wages, freight rates, rents, etc., on margins.—The changes in the spread between hog prices and retail prices of hog products have been closely associated with the changes in wages, freight rates, rents, and other items which are involved in processing and distributive charges. Sharp increases in these items occurred from 1917 to 1920, and further but less rapid increases took place from 1921 to 1930, after which a considerable decline occurred. In addition to the increases in the above items, the number of processing and distributive services for hogs and hog products also has increased, thus adding to the total charges for processing and distribution. These increased costs, however, may have been offset in part by certain improvements and economies in processing and distribution.

Direct marketing and operating margins.—In this study, consideration of margins was confined to the question of whether the rapid increase in direct marketing during recent years has caused significant changes in the margins, especially in the margins required by slaughterers.

The level of consumer demand, as already indicated, determines the aggregate retail value of hog products whether the amount sold is relatively large or small. The price of hogs is in the main determined by the volume of market hogs in relation to the amount that is left of the aggregate retail value after deducting margins taken by slaughterers and distributors. It follows, therefore, that the increase in direct marketing of hogs could not have significantly affected hog prices to producers unless it caused distributors and packers to take a greater or a lesser margin than they would have taken otherwise.

Although the margins between hog prices and prices of hog products are wider than before the World War, they are not wider than a decade ago, before the great increase in direct marketing began. From the standpoint of time of occurrence, the widening of spread between hog prices and retail prices of hog products and the growth of direct marketing have not been closely associated. Most of the widening of the spread occurred prior to 1921, whereas most of the rapid growth in direct marketing has occurred since 1925. It is also noteworthy that the spread was reduced somewhat from 1931 to 1933 as some of the costs involved in processing and distribution of hogs and hog products, such as wages and rents, were reduced. On the other hand, the proportion of hogs marketed direct showed a further increase during this period. In short, the general trend of margins between hog prices and prices of hog products in the last few years has been downward, whereas the trend of direct marketing has been decidedly upward.

It is not to be inferred from this inverse relationship of recent trends in direct marketing and packer margins that this method of marketing has caused this decline in margins. There is no reason to suppose that such economies as have been indicated in handling hogs through the direct, compared with the public-market, channels are sufficient to affect noticeably the margins between retail and wholesale prices of all hog products and the prices of live hogs. The decline in margins from 1931 to 1933 may be accounted for, as indicated above, by reductions in wages and certain other operating charges occurring in the depression. It has not been possible in this study to measure precisely the influence of each of the various factors that may have influenced margins. But statistical evidence bearing directly on margins in the processing and handling of hog products leads to the general conclusion that direct marketing has not caused a widening of margins.

Trends of margins in other products.—Certain indirect evidence tending toward the same conclusion is derived from a study of margins between farm prices and retail prices of other food products in which direct marketing either plays a small part or is absent altogether.

The widening of the spread between prices of raw products and prices of finished products in the post-war period as compared with pre-war period has not been confined to hogs and hog products, but has been an important characteristic of price movements of nearly all farm products utilized for food and of retail food prices. In the case of cattle prices and retail prices of beef, the spread has followed the same gen-

eral trend as the spread between hog prices and prices of hog products. A somewhat similar situation also has prevailed in the case of wheat prices and retail prices of bread. Available evidence indicates that the predominating factors responsible for the changes in the spread between hog prices and retail prices of hog products were not related to the changes in method of marketing hogs, including the growth of direct marketing.

COMPETITION FOR HOGS

The nature of competition for hogs and the question whether the degree of competition at one period is greater or less than at another involve rather complex questions. The principal statistical evidence as to whether competition has decreased with the growth of direct marketing is obtained by comparing the margins between prices paid by packers for hogs and the composite wholesale prices of hog products to determine whether these margins have widened in recent years when direct marketing has increased. Since the principal factors determining changes in the wholesale prices of hog products are changes in supplies of hogs and in the level of consumer incomes, neither of which are related to the methods by which hogs are marketed, the measurable effect (if any) of changes in marketing methods upon competition for hogs should show in the margins between hog prices and composite wholesale prices. As before discussed, these margins do not indicate any lessening in this competition.

Another approach to the subject is to consider the nature of competition for hogs, especially the factors tending to increase or decrease this competition, and whether these factors are likely to be affected by changes in the methods by which hogs are marketed. Such a consideration cannot be in terms of statistical analysis for the subject does not lend itself to statistical treatment, but must be in descriptive terms and based upon reasoning from known facts or valid assumptions to what seem to be logical conclusions.

In the case of hogs, which are produced and ready for market within a limited period, and which must be largely sold within that period, competition is the relative willingness or desire of different packers to take a part of this supply as offered, but in such proportions that all of them together clean up the total supply offered. The prices paid are the composite judgment of what these hogs are worth at present or at anticipated future prices obtainable for hog products. Each packer knows about what hogs are worth to him in relation to prices he is getting for hog products and to his costs of operation and distribution, and he tries to buy hogs below this indicated value in order to obtain a profit or to buy at price at least not above this value in order to avoid losses. The difference between products prices and operating margins sets the upper limit of the prices that will be paid for hogs over any considerable period although for short periods hog prices may be higher than the indicated current "cut-out" value of products.

The supply of hogs is offered at many places and in many different ways, and the number of packers seeking hogs at these different places varies greatly. But the mobility of the supply of hogs and hog products as reflected in variations in hog receipts and price differentials among markets is such that the total number of hogs at all places represents a composite supply, and all slaughterers seeking to buy hogs at any one or a number of places are in effect buying in

competition with many other slaughterers. The price level resulting from this competition is evidenced by the published quotations on hogs at many points, mostly public markets. These points are not price-determining points but only price-registering points, and there is no one basic price-determining point.

Although hog prices are largely determined by the prices obtainable for hog products, and these products prices are not affected by the methods by which hogs are marketed, it might be that changes in these methods might affect the proportion of the value of hog products going to hog producers if these changes should increase the costs to producers of moving hogs from farms to packers, or should reduce packer competition for hogs so that packers are able to widen the margin between hog prices and hog-products prices to cover increased processing and distribution costs or to increase profits.

This study, however, shows that direct marketing has tended to reduce rather than to increase the actual costs of moving hogs from farms to packers and hence is to be considered generally advantageous unless it has tended to reduce packer competition for hogs and to increase packer margins. A detailed study of packer competition at public markets and at interior buying points leads to the conclusion that the factors determining and limiting the competition are substantially the same at both and are little changed regardless of the place where hogs are bought.

But there is a marked difference in the character of competition at public markets and at interior buying points. At public markets the competition is for a supply of hogs that is physically present, largely out of the control of the producers, and under the necessity of early sale. At interior buying points it is a competition to draw hogs, that are still under the control of the producer, to different points. Competition at public markets is more apparent than at interior points since relatively large numbers of buyers and sellers in personal contact are readily observable at the former, while at the latter the chief evidences of competition are the posted prices and the telephone or personal requests being received for bids on hogs. But to the producer at home, with hogs for sale, the latter competition is more useful since he is in a stronger position opposite the buyer with his hogs still at home than he would be if they were at a public market and had to be sold.

Certain lines of evidence are significant, as for instance the number and variety of market outlets for hogs, the extent to which the volume of hogs of the different grade classifications consigned to public markets is sufficient to afford a reasonable opportunity for those markets to establish price quotations reflecting the supply of and demand for hogs of the various grades, and the extent to which prices are kept substantially in line among the various markets and indicate the relation between receipts and prices at different markets.

Market outlets available to producers.—Replies received from 12,500 producers of hogs show that on an average the individual producers had available to them 4 market outlets. The average number of market outlets in the 12 States designated as the Corn Belt exceeded slightly the average for the 15 States, while in the 3 States of Oklahoma, Kentucky, and Tennessee, the average was about 3. An analysis of the replies suggests that these averages may be an understatement, as in many instances it was apparent that the number

of outlets where the producer usually sold hogs, as well as the number of markets available, were not all reported. For example many of the producers did not name public markets as available outlets, although it is definitely known that these producers were within areas where such markets are available.

The extent to which the different market outlets are actually utilized was shown by 9,500 producers, who reported that they marketed 629,200 hogs in 1933. These hogs were disposed of through the different market outlets as follows: Public stockyards, nearly 45 percent; local buyers, 22 percent; local packers, 14 percent; cooperative shipping associations, nearly 11 percent; concentration yards and buying stations, 6 percent; and auctions, 2.6 percent. Substantially the same distribution appeared for 1932, in which year the same producers marketed 604,000 hogs through these channels. It appears, therefore, that not only do the producers have several market outlets available, but these outlets are widely used, some of course more than others.

Recent information from another source, showing the number of outlets used by producers, has become available through records filled out by signers of corn-hog contracts. These records, tabulated for representative townships in most of the Corn Belt States, show that the number of outlets available to the hog producers are relatively large and well distributed. In very few of these Corn Belt townships did any single agency handle over 50 percent of the hogs sold. In the 37 townships where more than 50 percent was handled by any one agency, these agencies included local buyers in 15 townships, packing plants in 18, concentration yards in 2, and auctions and public markets in 1 township each. These tabulations and the reports furnished by producers answering the questionnaire are in substantial agreement as to the number of market outlets available.

Producers' source of market information.—The producers' means and frequency of obtaining livestock market information are significant in considering competition. Of the 11,350 farmers who reported on this question, 84 percent obtained market information through daily papers, 56 percent by radio, and 15 percent by telephone. A substantial number also received market information through weekly papers, daily and weekly mail reports, and through other sources.

In the dissemination of this information the Market News Service of the Bureau of Agricultural Economics plays an important part, but the effectiveness of these and other channels of information would be much greater, the study indicates, if a reasonable uniformity of grade classification were used in the various hog markets. This would give the producer a better basis for judging what he might expect for his lot of hogs, especially the producer who is in a position to know approximately how his hogs would grade according to the generally recognized standards.

Quality of hogs at various types of markets.—If various types of markets, particularly the public markets, are to reflect adequately the level of prices at a given time through price quotations at these markets, it is significant to note whether the volumes of hogs in each of the various grades of hogs received at public markets were substantially different relative to the volumes and grades of those received at other markets. A group of qualified hog graders visited various markets in the course of this study and graded nearly 200,000 hogs.

Of these, nearly 108,000 were graded at 29 public markets, slightly under 69,000 at 45 packing plants, more than 16,000 at 42 concentration yards, and nearly 6,000 at 16 auctions—in all 132 market outlets distributed over the 15 leading hog-producing States. The classification made was limited to butcher hogs, packing sows, and miscellaneous, of which the distribution was, respectively, 92.8, 3.3, and 3.9 percent. Of the nearly 92,000 hogs included in this differentiation at public stockyards, 92 percent were butcher hogs, or practically the same as the average for all types of markets.

In grading the hogs received at the various markets, 15.4 percent graded Choice at public markets as compared with 15.6 percent at the interior points where this grading was done. The public-market hogs graded 50.7 percent Good as against an average of 51.1 percent Good of all the other markets. At the public markets 30.4 percent graded Medium and 3.5 percent Cull, as against an average of 30.9 and 2.4 percent, respectively, for the interior points.

Because of the outstanding importance of the Chicago market, a special check was made of the grades of hogs received as direct purchases and for sale at the public stockyards at that market where 56,051 hogs were graded, of which 36,150 were public-market hogs and 20,901 direct purchases.

The percentage distribution of the hogs consigned for sale was—

	<i>Percent</i>
Choice.....	19.3
Good.....	41.7
Medium.....	33.8
Cull.....	5.2

whereas of the hogs bought direct the percentages were—

	<i>Percent</i>
Choice.....	15.5
Good.....	40.9
Medium.....	40.9
Cull.....	3.7

The distribution of the receipt of hogs at various markets by grades varied somewhat among regions. The above summary, at least so far as the sample included in this study is concerned, shows that public markets received about the same proportion of hogs of the different grade classifications as were received at the other types of markets. Of the hogs graded at Chicago, 61 percent of the public-market hogs graded Good and Choice as against 56 percent of the hogs bought direct by packers.

It is possible that the grade distribution of the hogs graded in the particular period when this survey was made may have been influenced somewhat by differences in market movements affected by the then-prevailing feed situations. Nevertheless, no evidence was found indicating that hogs of better grades are being concentrated in the channels of direct marketing, and that public markets receive a preponderance of low-grade hogs. Moreover, it appears that hogs of the better grades are received in sufficient numbers at the different public markets to establish price quotations registering the level of prices on these grades.

Differentials in price among markets.—Prices paid for hogs at individual interior markets in Iowa and southern Minnesota are not based on a fixed differential measured from Chicago, or from some other public market. Data covering the 3-year period 1931-33

showed that the price changes from day to day more frequently at public markets than at interior markets. When prices at these markets change on the same day, such change may not be of the same amount, and not always in the same direction.

The differential in price between pairs of markets, whether public or interior, are more likely to change from one day to the next than to remain the same. However, competition operating among the different markets prevents the price at an individual market from being out of line over any considerable period.

Prices at the different interior packing plants in Iowa and southern Minnesota move together from one day to the next more closely than do prices at each of the plants with prices at Chicago or Sioux City. The average day-to-day change in differentials for these interior packing-plants is greater when measured from Chicago or Sioux City than when measured from plants in their own group.

Although there is close relation between prices quoted at some markets and prices at other markets, no one market actually determines the price for hogs sold at other markets in this area. The equilibrium of the composite supply and composite demand at all markets marks the level of hog prices. There is no fixed relationship between prices at any market, and prices at other public markets or at interior points. Data show that a rise or a decline in hog prices is as likely to appear first at the interior markets as at the public markets.

The changing relationship between supply and demand forces at a given market, whether public or private, may cause the price at such market to be temporarily out of line with other markets, and this happens at Chicago as well as elsewhere. This sets in motion market forces which tend to restore the equilibrium by shifting the supply of, or the demand for, hogs from one market to another. In correcting one abnormal price relationship, other differences are likely to occur and similar forces to correct these are in turn set in motion. Although price relationships have a tendency to gravitate toward a certain point, they are continually affected by the changing forces of supply and demand and consequently these relationships are in a constant state of flux.

Relationship between receipts and prices at different markets.—

The receipts of hogs at a given market are normally different for different days of the week. Receipts of hogs direct to packers at Chicago were more uniform in volume from day to day than were hogs consigned for sale at that market. The volume of hogs consigned for sale as well as those received direct by packers were largest on Monday, but direct receipts averaged smallest on Tuesday, whereas the receipts of hogs consigned for sale were smallest on Saturday. Receipts of hogs at interior markets in Iowa and southern Minnesota were largest on Saturday. The part of the Saturday's receipts at concentration yards that were forwarded to Chicago reached that market on Monday, which accounts for the high direct receipts at Chicago on that day.

Prices paid at Chicago on Monday when receipts were normally large were fully as high as the average for the week. The price at Chicago on Saturday when market receipts were very small tended to be as low as on any day in the week; but this price was not reflected to interior buying points on that day. The heavy receipts at interior

markets on Saturday were purchased at prices which were as high as, or higher, than the average for the week.

Volume of hog receipts on each day in the week tends to have a normal relation to volume of receipts on any other day, but the normal for any day may be materially different from the normal for other days. Differences in volume of receipts at public markets on any day in the week, as compared with receipts on any other day, do not cause price differences as between the days for which the comparison is made. A material increase or decrease in receipts on any day from the day's normal, tends to cause an inverse change in prices for that day.

As the differentials among markets are not wide as a rule over any considerable period, except for differences that may be explained by transportation charges and other fundamental factors, it is concluded that competition among markets, public and direct, is sufficiently effective to prevent prices over any considerable period in any market or area from being materially out of line with the general level of hog prices as determined by the broad forces of demand and supply.

In connection with the effect of the increase in direct marketing on the relation of packer demand to supply at the public markets, it should be noted that while direct purchase of a given volume of hogs by packers reduces by that amount their demand for hogs at public markets, it is equally true that over a period of time the supply of hogs coming to public markets is correspondingly reduced.

CONCLUSIONS

This study shows that the growth of direct marketing of hogs and of other livestock is due to causes which are closely associated with the economic development of the country and particularly of its livestock industry. It is shown that the sharp decline in the level of hog prices since 1926 has been due to the drastic reduction in consumers' income incident to the depression and to the decline in foreign demand for American hog products.

It does not appear that direct marketing has restricted competition among slaughterers and distributors and enabled them to exact a wider margin. In fact, the principal widening in margins occurred prior to the years of rapid increase in direct marketing and was not confined to hogs or to meat animals generally, but appeared also with respect to other products outside of the influence of direct marketing of livestock. The conclusion that direct marketing has not caused a widening of the margins between the price of a given weight of live hogs and the wholesale or the retail price of the products derived therefrom is also supported by the fact that these margins declined materially during recent years of rapid increase in direct marketing. This decline, however, was due largely to reductions in labor charges and in some other costs during the depression.

Data on price differentials among markets show that no one market, nor any particular type of markets, sets the level of hog prices for all markets. The distribution of the volume of hogs consigned to public markets among the different grade classifications was shown to be approximately the same as of the hogs marketed direct; that is, the public markets on the whole were not receiving more than their proportionate share of low-grade hogs. This, together with the fact that no one market or group of markets sets the

price for all markets, leads to the conclusion that the growth of direct marketing has not impaired the price-registering function of the public markets nor caused the prices at the interior markets to be lower than if direct marketing had not increased.

Moreover, this study shows that the growth of direct marketing has not caused the returns to producers of hogs to be less than they would have been otherwise.

Although this study shows that the growth of direct marketing has not been to the disadvantage of the producer, it also shows that there is need for correction of some practices and the development of additional services to improve the marketing of hogs.

RECOMMENDATIONS

(1) The method of pricing hogs in vogue at certain direct-buying points in some areas by means of a "board" price which is posted and made generally known, together with a variable "add" to this price, which is not publicly announced, leads to confusion and uncertainty regarding the price situation and may readily be developed into a deceptive or discriminatory practice. This method should be modified or replaced by one that makes generally known to all sellers the range of prices that are being offered and being paid for different grades of hogs.

(2) The practice of "filling" hogs by feeding before selling should be discontinued at all markets, except such feeding as may be advisable for humanitarian reasons. The practice is wasteful of feed, increases marketing costs, reduces the value of the animals for slaughter, and tends to lower rather than to increase total net returns to producers.

(3) The practice of docking "piggy" sows and stags to partially offset their undesirable characteristics as slaughter animals is not an equitable method of accomplishing this end, and the practice should be eliminated in all markets. Such animals should be sold and bought on their merits at actual weights, as is now done in the case of cattle and sheep.

(4) Scale facilities and weighing by the buyers of hogs at interior marketing points should be subject to such supervision as will give general confidence that sellers' interests are fully protected.

The above-recommended actions and the correction of any other undesirable practices might be effectuated in part by mutual agreements or common consent among buyers and sellers and/or by such further enlargement of the powers and facilities of the Packers and Stockyards Administration as may be needed to give this agency the necessary authority to accomplish these ends.

(5) It is further recommended that uniform grade standards for trading in hogs be adopted for use at all types of markets. This would facilitate the sale of hogs on the basis of quality and would eliminate the confusion arising from the use of many systems of grading and of grade terms that differ from market to market. Since the adoption of standard grades for hogs and their application (sorting and selling by grades) through voluntary agreement is unlikely, and the grading of hogs by official graders under mandatory requirements would entail considerable addition to marketing costs, an intermediate plan is suggested. Selling and buying on grades would not be compulsory, but if trading is done on the basis of grades, Federal standards

alone should be used under Federal supervision, and all price quotations on grades should be in terms of these Federal standards. This would require additional legislative authority.

(6) Extension of the Federal Market News Service is suggested. The service now maintained in the Iowa and southern Minnesota direct-marketing area should be strengthened, and a similar service is particularly needed in other important direct-marketing areas, especially in the eastern Corn Belt, where information regarding supply, demand, and prices paid is at present quite inadequate to allow producers to choose the best outlets available. The general adoption of uniform grades would provide a better basis for quoting and reporting prices of hogs.

CHAPTER 1

GROWTH AND PRESENT STATUS OF DIRECT MARKETING

Marketing methods used by livestock producers, during the various stages of the Nation's development, and the expansion and growth of its livestock industry, have changed as new facilities have been provided and as producers have endeavored to find ways of reducing their marketing costs and of obtaining the largest possible net return for the animals they have had to sell. A study of the various methods that have been used indicates that they have been determined to a large extent by such factors as transportation facilities, accessibility to the available slaughtering and meat-distributing centers, relative number of livestock produced in the different sections, competition of buyers, the activities of those who sought opportunities for profit in providing market facilities and services, and the efforts of producers themselves, individually and through organization, to reduce marketing costs. The operation of these factors have resulted to a greater or lesser degree in the use of such methods as selling to local or country buyers, selling direct to retail butchers or to wholesale slaughterers, selling on public markets and utilizing the services of commission agencies who operate there, selling to operators of concentration yards and country buying stations, selling at various kinds or types of public auction, utilizing various forms of cooperative agencies for effecting sales, or various combinations of these different methods.

Regardless of the marketing method used, the final objective is to effect sale and delivery of the animals ready for slaughter to those engaged in the business of slaughtering livestock and preparing meats for distribution through trade channels. This objective may be accomplished by direct negotiation between the producer or finisher and the slaughterer, or the latter's representative, or it may involve the participation of other agencies that render certain services to the buyer or the seller, or assume some of the risks incident to the transfer and sale of livestock. Ordinarily, the greater the distance between the farm or ranch where the animal is produced or made ready for market, and the slaughtering plant, the less the opportunity for direct negotiation between producer and slaughterer, and the greater the need, as a rule, for the services of intermediate agencies. As regards transportation, however, the time element involved is usually more important than that of relative mileage, especially when consideration is given to the relative cost of different methods. Another important factor determining the choice of transportation facilities is that of convenience to the shipper. During recent years this has been of special significance in the competition between railroads and motor trucks.

EARLY METHODS OF MARKETING LIVESTOCK

Before the development of railroads it was a common practice to drive livestock to market or to the place of slaughter. To some extent wagons were used in transporting hogs, but only when the number to be moved at one time was relatively small. Frequently the producer slaughtered the hogs and delivered the carcasses to a packing plant, where they were processed into cured meats. If the producer did not wish to assume the responsibility of driving his stock to market he usually could sell to a local trader or to a visiting buyer who was commonly known as a drover. In later years the drover became known as the local or country buyer or local dealer in livestock. In carrying on his operations, the drover endeavored to make a profit by trying to buy livestock from producers at a lower price than he could obtain from the slaughterers or others to whom he resold. He assumed the speculative risk of the possible occurrence of price declines and death losses before he had an opportunity to resell, and he performed the service of getting the stock delivered from the farm to the slaughterhouse or market. In some cases slaughterers or their agents visited the farms of producers and made direct purchases, thereby performing the same services rendered by the drover or local buyer.

Regardless of whether the producer sold direct to the slaughter or whether actual delivery was made through the operations of the drover who bought from the producer and resold direct to the slaughterer without utilizing the services of a commission agent, all such transactions would be defined as "direct marketing" or "direct selling" as these terms are now commonly used and understood. Direct marketing, therefore, was one of the earliest methods of selling livestock for commercial slaughter, and it has been used continuously and extensively ever since. Prior to the Civil War it was the principal method used, as the sale of livestock at public stockyards or public markets and through the use of the services of a commission agent acting for the seller apparently did not develop until after the railroads came into rather extensive use for transporting livestock.

DEVELOPMENT OF COMMERCIAL SLAUGHTERING PLANTS

Because of the difficulties of transportation, the general tendency in the early period of settlement of the country was for slaughtering and meat-packing plants to be established at many of the trading centers located in or near those sections where livestock was produced in relatively large numbers. Trading centers located on the larger streams were especially favorable for the location of packing plants because these streams not only provided water transportation for the shipment of packing-house products, but they also served to carry away the offal and waste material. It was primarily because of its favorable location on the Ohio River and near the important hog-producing territory of southern Ohio and central Kentucky that Cincinnati became the first large pork-packing center of the Corn Belt.

The first packers were usually local merchants who traded in almost every kind of commodity, and in consequence were in position to exchange goods needed by the farmer for the hogs or hog products the latter had for sale. At first most of the slaughtering was done on the farm, and the curing and packing was done by the merchant. Later,

the general practice was for the processor to buy live hogs and slaughter them at his plants. Prior to the development of refrigeration, wholesale slaughtering and packing-house operations were carried on almost entirely during the winter months; hence it was during these months that most of the hogs were marketed. The products of the early packing houses were limited almost entirely to cured products since fresh meats could not be shipped or handled readily because of risk of spoilage. After refrigeration came into more general use, slaughtering and meat packing could be carried on throughout the year, and a larger proportion of the hog carcass could be sold as fresh meat. Thus the marketing season for hogs was extended to include every month.

CENTRALIZATION OF PACKING PLANTS

It was not until after 1850 that railroads were used extensively for transporting livestock, although railroad development began about 1830. The building of the railroads resulted in the establishment of certain towns and cities as important transportation centers, and in consequence many of them were favorable for the location of large-scale packing plants. In addition to their transportation advantages, such centers were in position to furnish an adequate labor supply and the banking and credit service needed by packers. These advantages, together with the very large supply of livestock available in the surrounding territory, accounted largely for the establishment of wholesale meat-packing plants at Chicago, St. Louis, Kansas City, Omaha, St. Joseph, Sioux City, and St. Paul and later at Fort Worth and Denver.

Refrigeration made it possible to utilize to the fullest extent the increasing supply of livestock, and it was an important factor in changing the system of meat distribution since it brought into use the refrigerator car for the transportation of fresh meats. With the tremendous expansion in livestock production from 1870 to 1900, which made it possible for the packers to obtain increasing slaughter supplies, greater investments of capital were attracted. These investments tended to be concentrated in a relatively small number of companies that had acquired special advantages in the distribution of product, especially in the large population centers in the eastern part of the country. These advantages developed out of the control of refrigerator cars and from railroad freight-rate competition in the eighties which tended to favor certain packing companies. As a result of all these developments, in the late eighties and early nineties there was a marked tendency toward centralization of the packing industry, which stimulated the growth of the great packing centers, Chicago, Kansas City, St. Louis, and Omaha, and a number of plants in the smaller cities were discontinued.

ESTABLISHMENT OF PUBLIC STOCKYARD MARKETS AND COMMISSION SELLING AGENCIES

The establishment of packing plants in transportation centers necessitated the building of yard facilities for handling the livestock received, and since it was a more common practice for the producer or drover to take or ship his livestock to the slaughterer's place of business rather than for the slaughterer to travel through the country seeking to make purchases, it became necessary to provide such yard facilities

near the slaughtering plants where the animals could be held until sale was made and where buyers and sellers could bargain. The first yards were provided by the operators of the packing plants, who permitted use of the yards free of charge. The first public yard of record at which charges were made for services was established at Chicago in 1848 (3).¹ This yard did not have railroad facilities, and hence was inadequate. At least five other yards were established between 1852 and 1865 by the different railroads serving Chicago, but it soon became apparent that trading would be facilitated if Chicago had only one public market; hence the public stockyards now operating there were built and opened for business on Christmas day, 1865.

The Kansas City stockyards were opened in 1871, and most of the other large markets were established before 1900. In many instances the promoters and builders of these public yards were also financially interested in the railroads then in operation, and the yards thus established also served as unloading and terminal facilities for these railroads and aided in expanding the business of the railroads. Operators of some of the larger wholesale packing plants likewise were interested in the promotion and in the ownership of some of the public stockyards established.

To these public markets there soon came a very large proportion of the livestock produced in the United States. The increase of the shipments from 1880 to the beginning of the World War was very marked. About 100 public stockyards are now in operation, but the number of livestock received at three-fourths of these markets is relatively small in comparison with the total handled or slaughtered. It is of interest, however, that no public stockyards were established in that large area lying between Chicago and Missouri River points, or between St. Louis and Kansas City. Neither were any located west of St. Paul in Minnesota and the Dakotas. This large area soon became the Nation's most productive livestock territory, and for many years it has produced a very large part of the yearly supply of hogs for commercial slaughter.

With the establishment of the public stockyards there came into existence the livestock commission agency, the primary function of which is to act as the agent of the livestock shipper in effecting the sale of his stock, or to serve as a purchasing agent for those who wish to buy livestock. The first such agency was established at Chicago in 1857. The commission agent usually was better informed than the producer or drover regarding local market conditions, demand, and prices at the public market where he operated and hence could bargain more advantageously with prospective buyers. He would see that the animals were fed and watered and given proper care after arrival at the market, and if deemed advisable would sort them into lots so as to make them appear more attractive to buyers and more readily salable. In addition, he would collect the proceeds from the sale, act as the seller's agent in paying the transportation costs and other expenses incurred, and remit to the seller the net amount due him from the transaction. For his services the commission agent received a fee—usually a specified sum per head, or per car, or in some instances a percentage of the gross proceeds from the sale.

¹Italic numbers in parentheses refer to Literature Cited, p. 202. Besides the publications specifically referred to in this report the technical staff reviewed a great many other books, periodicals, and bulletins, and had access to a number of unpublished manuscripts including some intended for publication.

After railroad transportation became generally available and the public stockyard markets were established, the common practice in marketing hogs was for the producer to sell to the local or country buyer if he had less than a full carload, or to consign to a public market if he were in position to sell in carload lots. In many instances producers who had less than a carload lot would combine with their neighbors and ship jointly. Later, the cooperative shipping association came into existence and to a considerable extent replaced country buyers in some localities, at least for a few years. The growth and decline of shipping associations is discussed more fully elsewhere in this report.

Local buyers usually consigned their purchases to the public markets where they were offered for sale through commission agencies to the packer buyers. The practice of selling direct to packers was not discontinued entirely, as those plants located in hog-producing areas and some distance from the public markets continued to obtain most of their slaughter supplies through direct purchases from both producers and local buyers. Such packers because of their location generally have been designated as "interior" packers or "local" packers as distinguished from "public-market" packers.

In general, it may be stated that for many years after the public stockyards markets were established it was the common practice for the slaughterers located at such markets to purchase their livestock supplies on these markets. Those located at other than public-market points, however, continued to buy most of their hog supplies direct from the producer or the country buyer. Packers located outside of the surplus livestock producing territory who obtained a part, or all, of their hogs from that territory, especially those located in the eastern seaboard States, generally obtained their hogs at the public markets in the Middle West. An exception, was a small group of New England packers who bought a considerable proportion of their hogs direct through the operation of concentration yards in Iowa and Illinois. Purchases at public markets by most eastern packers were usually made through agents who specialized in this field and who are commonly known as "order" buyers or "shipper" buyers and who operate on a commission basis in somewhat the same manner as the commission agents who serve livestock producers and country buyers in selling livestock. Before the World War the public-market packers and the eastern packers bought and slaughtered the major portion of the yearly supply of hogs that moved in the commercial channels of distribution. Consequently the proportion of the hogs slaughtered which was bought at public markets was considerably larger than that bought direct from producers and drovers. In brief it may be stated that from the Civil War to the World War, the marketing of livestock at public stockyard markets to an important extent replaced the practice of marketing livestock direct, which had been used so extensively in the years prior to the Civil War.

GROWTH OF DIRECT MARKETING AND HOG SLAUGHTER IN IOWA SINCE 1850

As has already been pointed out, it was the general practice of the operators of the early packing plants to buy practically all of their hogs direct, either alive or dressed, from the producer or the country drover. This was a common practice throughout Ohio, Indiana,

Illinois, and Iowa, as hog production increased in these States. The extent of direct buying in relation to sales at public stockyards over a long period is indicated in table 1, which shows the average number of hogs slaughtered in Iowa and at Sioux City by decades from 1850 to 1934.

TABLE 1.—*Hog slaughter in Iowa and at Sioux City, 10-year averages, 1850-1934*

Year ended June 30	Hogs slaughtered—			Percentage of Iowa total slaughtered—	
	In Iowa	At Sioux City	At all other Iowa points	At Sioux City	At other points
	<i>Thousands</i>	<i>Thousands</i>	<i>Thousands</i>	<i>Percent</i>	<i>Percent</i>
1851-60.....	98	0	98	0	100.0
1861-70 ¹	213	0	213	0	100.0
1871-80.....	518	17	501	3.3	96.7
1881-90.....	1,221	187	1,034	15.3	84.7
1891-1900.....	1,548	326	1,222	21.1	78.9
1901-10.....	2,337	842	1,495	36.0	64.0
1911-20.....	2,741	1,202	1,539	43.9	56.1
1921-30.....	4,520	1,582	2,938	35.0	65.0
1931-34 ²	5,889	1,510	4,379	25.6	74.4

¹ 7-year average; no data available for 3 years, 1868-70.

² 4-year average.

Figures for 1850-1907, from *Meat Packing in Iowa (10)*. Figures for 1908-1934, from records of the Meat Inspection Division, Bureau of Animal Industry, U. S. Department of Agriculture.

There was no public stockyards market in Iowa until 1884, when one was established at Sioux City. That at Sioux City is still the only public market in Iowa. Prior to its establishment practically all the hogs slaughtered by packers in the State were bought direct. The operators of packing plants located elsewhere in Iowa than at Sioux City have continued the practice of buying most of their hogs direct. The total slaughter of these interior plants, therefore, is a rough measure of part of the direct-buying operations in that State. Certain packers operating plants in other States also followed the practice of buying some hogs direct in Iowa, and in more recent years there has been a marked increase in direct buying of hogs in Iowa by packers located outside the State.

It will be noted that the yearly slaughter of hogs by the Iowa plants which obtained their supplies through direct purchase averaged 98,000 head during the decade 1851-60 and that this increased to 2,938,000 in the decade 1921-30, and to 4,379,000 in the 4 years ended June 30, 1934. Prior to 1884, when the public market at Sioux City began operating, practically all the hogs slaughtered in the State were bought direct. In the early eighties the yearly commercial slaughter of hogs in Iowa averaged about 1,000,000 head, and these were practically all direct purchases. As the volume of business at Sioux City increased, however, the proportion of the State slaughter which represented direct purchases decreased, and during the decade of 1911-20 it represented about 56 percent of the total. In the decade 1921-30 it rose to 65 percent, and in 1931-34 it was about 75 percent.

Thus it will be seen that direct marketing has been a continuing practice used by Iowa packers and farmers in the buying and selling of hogs ever since the State first produced hogs on a commercial

scale. There was an increase in the proportion slaughtered at Sioux City from the early eighties, when that market was established, to the decade 1911-20. The peak was reached during the war year 1918-19, when slaughter there was 48.7 percent of the total federally inspected slaughter in the State. Since that year the trend in the proportion of the Iowa total which was slaughtered at Sioux City has been decreasing, whereas that of packers located elsewhere in the State who buy most of their hogs direct has been increasing.

GROWTH OF DIRECT MARKETING DURING THE LAST DECADE

In the years following the World War there has been an increasing trend in the proportion of livestock bought direct by packers and a corresponding decline in the proportion bought at public stockyards. Statistical information as to the numbers and relative proportions of each of the different species marketed direct and through public stockyards is not available for the entire country for the years prior to 1923, but for that and subsequent years this information insofar as it relates to animals slaughtered under Federal inspection is shown in figure 1, and in table 44. The proportion of the federally inspected slaughter of hogs which was purchased direct by packers increased from 24.0 percent in 1923 to 43.8 percent in 1933; that of calves increased from 13.8 percent to 26.3 percent, that of cattle from 10.4 percent to 16.5 percent, and that of sheep and lambs from 14.0 percent to 21.2 percent.

Livestock slaughter fluctuates from year to year according to the number of animals produced or finished for market. Hence a comparison between years of actual numbers of animals bought direct or at public markets may be somewhat misleading. In 1923, for instance, federally inspected hog slaughter totaled 53,334,000 head, whereas in 1933 it was about 6,000,000 less. But in the latter year the direct purchases in inspected slaughter totaled 20,708,000 head as compared with 12,802,000 in the earlier year, when total federally inspected slaughter was about 13 percent larger. Hogs slaughtered under Federal inspection which were acquired at public stockyard markets in 1923 numbered 40,532,000 head, or 76.0 percent of the total. In 1933, such purchases numbered 26,518,000 head, or 56.2 percent of total inspected slaughter.

Cattle slaughter under Federal inspection totaled 9,163,000 head in 1923 and 8,655,000 in 1933. Direct purchases in this slaughter comprised 954,000 head in the earlier year and increased to 1,430,000 in the later year. The proportion of this slaughter purchased at the public markets on the other hand declined from 89.6 percent to 83.5 percent of the total or from 8,209,000 head to 7,225,000. Federally inspected slaughter of calves amounting in 1933 to 4,907,000 head was 407,000 larger than that in 1923, but direct purchases in that year constituted 1,292,000 of the total as compared with 630,000 in the earlier year. During the 11-year period the proportion of the total slaughter representing calves bought at public stockyards dropped from 86.2 percent to 73.7 percent.

Federally inspected slaughter of sheep and lambs during 1923 totaled 11,529,000 head and increased to 17,354,000 in 1933. Direct purchases during this period increased from 1,687,000 head to 3,693,000. Although the number bought on public markets increased from 9,842,000 to 13,661,000 there was a decline in the proportion thus bought, the percentage of the total dropping from 86.0 to 78.8.

These statistical comparisons indicate very definitely the pronounced shift during recent years from buying and selling livestock at public markets to buying and selling direct. Although the data presented relate only to animals slaughtered under Federal inspection,

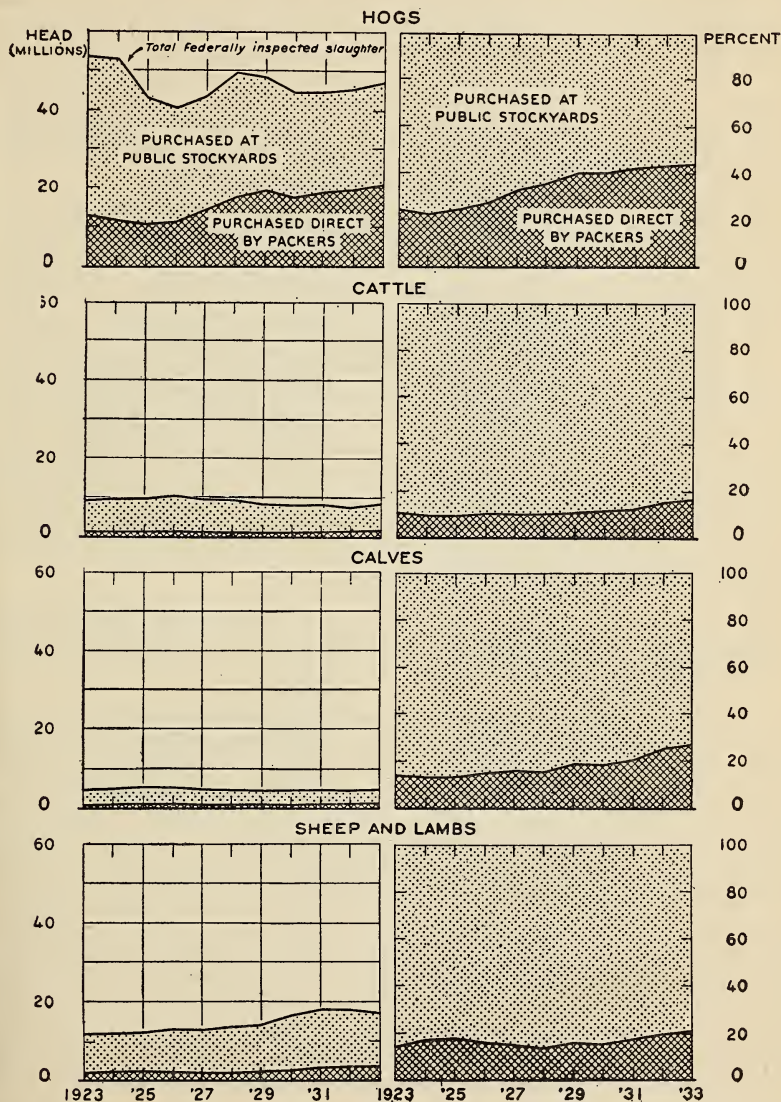


FIGURE 1.—SOURCE OF PURCHASE OF LIVESTOCK SLAUGHTERED UNDER FEDERAL INSPECTION, 1923-33.

The proportion of each species of livestock bought direct by wholesale slaughterers increased from 1923 to 1933, whereas the proportion purchased at public stockyards decreased.

it should be kept in mind that such slaughter represents the greater part of the wholesale commercial slaughter of the country. There is, however, ample evidence to indicate that wholesale slaughterers who operate without Federal inspection also buy a considerable

proportion of their livestock direct. Reports of a large number of the concerns operating without Federal inspection show that during the first half of 1934 their direct purchases of livestock represented the following percentages of their total purchases: Cattle, 31.5; calves, 25.3; hogs, 32.2; and sheep and lambs, 34.4. Direct purchases of federally inspected plants during the same period comprised the following proportions of their total purchases: Cattle, 16.6 percent; calves 28.5 percent; hogs, 42.2 percent; and sheep and lambs, 20.2 percent. It will be observed that the plants not under Federal inspection obtained a larger proportion of their cattle and lambs and a smaller proportion of their calves and hogs through direct purchases than did the plants operating under Federal inspection.

The trend of retail slaughter of livestock has been downward for many years. Only a very small proportion of the animals that are included in this slaughter represents purchases at public markets. Retail meat dealers who conduct slaughter operations are located chiefly in rural districts and in small towns and cities or adjacent to livestock-producing sections; relatively few are located near the public markets. These retailers seldom buy livestock in carload lots; hence it is certain that the greater part of the livestock slaughtered at retail is bought direct from producers or local country buyers rather than at public markets. Livestock slaughtered by farmers for home use or for sale as farm-dressed meats consists mostly of animals raised or finished by the farmer who does the slaughtering, and includes very few animals purchased at public markets for farm slaughter. Buying at public markets for slaughter, therefore, is done almost entirely by slaughterers who operate on a wholesale scale.

TRENDS IN DIRECT MARKETING OF HOGS IN THE CORN BELT STATES COMPARED WITH TRENDS IN MARKETING THROUGH PUBLIC STOCKYARD MARKETS

The preceding section presented evidence of the growth of direct marketing of livestock and the decrease in marketing through public stockyards during recent years as shown by data relating to federally inspected slaughter. Further evidence of these changes in marketing methods is found in the data on hog marketings from 9 of the 12 Corn Belt States for the years 1920 to 1933, inclusive. Complete data for Indiana, Ohio, and Michigan are not available; hence these States were omitted in making this analysis. The data on marketings were obtained by the Division of Crop and Livestock Estimates of the Bureau of Agricultural Economics from stockyards companies, packers, and interior buying points for the purpose of getting records which could be used for comparing hog production in the different States. These data show shipments of hogs according to destinations and are classified into shipments consigned to, or passing through, public stockyards, and shipments going direct to packing plants and not going through such stockyards.

At a number of public stockyards, but not at the Chicago stockyards, hogs that pass through the yards received direct by packers located at those yards are not reported separately as "packer directs".

So it is not possible from the available records to show by State origin the exact number of hogs marketed direct to packers as compared with the number marketed through public stockyards. The numbers shown in this discussion, therefore, as representing hogs marketed direct are somewhat smaller than the total direct purchases of packers in the different States. Likewise, the numbers representing marketings at public stockyards by States are somewhat larger than the actual totals of such marketings.

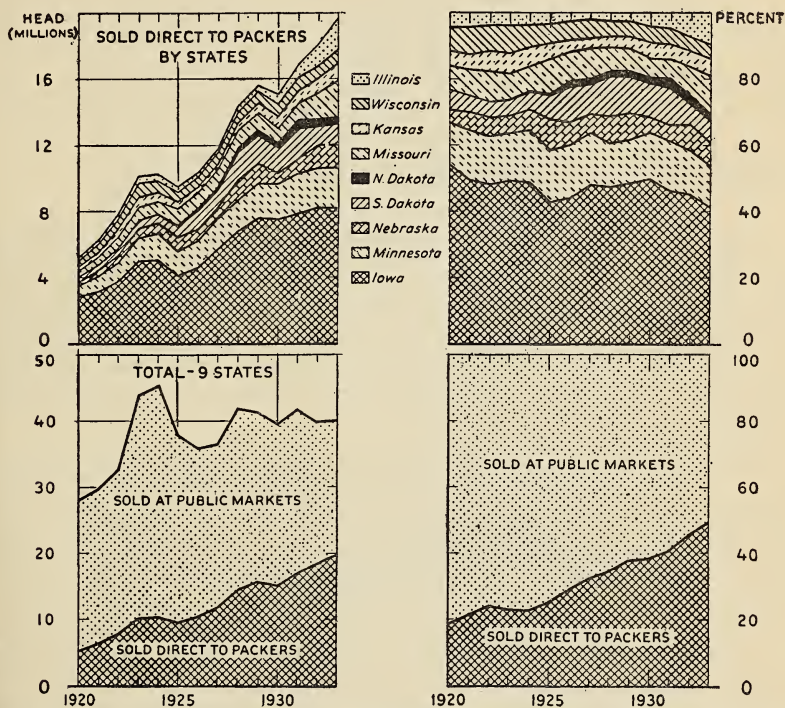


FIGURE 2.—HOGS SOLD DIRECT TO PACKERS AND SHIPPED TO PUBLIC MARKETS FROM NINE CORN BELT STATES, 1920-33.

More than 48 percent of the hogs marketed from nine Corn Belt States in 1933 were marketed direct to packers, as compared with about 18 percent in 1920.

The combined total of hogs marketed direct from these nine Corn Belt States increased from 5,212,000 head in 1920 to 19,418,000 in 1933 (fig. 2 and table 45). The number sold at public markets increased from 22,808,000 head in 1920 to 35,049,000 in 1924, and then declined to 20,853,000 in 1933. The percentages marketed direct increased from 18.2 percent of the total sold in 1920 to 48.2 percent in 1933; the greater part of the increase took place after 1925, and the increase was most marked after 1928 (table 2).

TABLE 2.—*Percentage of hogs marketed direct to packers from Corn Belt States, 1920-33*

Year	2 east- ern Corn Belt States ¹	5 north- western Corn Belt States ²	2 south- western Corn Belt States ³	9 Corn Belt States	Year	2 east- ern Corn Belt States ¹	5 north- western Corn Belt States ²	2 south- western Corn Belt States ³	9 Corn Belt States
	Percent	Percent	Percent	Percent		Percent	Percent	Percent	Percent
1920.....	9.4	24.0	12.3	18.2	1927.....	13.3	40.2	23.5	32.3
1921.....	11.6	27.0	14.7	21.3	1928.....	13.4	43.5	21.6	34.4
1922.....	14.0	28.8	18.3	23.9	1929.....	15.3	48.9	21.0	37.9
1923.....	14.7	27.5	16.6	23.0	1930.....	19.8	47.0	23.7	38.3
1924.....	12.8	26.8	17.3	22.6	1931.....	23.2	47.1	29.0	40.5
1925.....	13.1	28.8	23.0	25.0	1932.....	30.0	52.9	34.9	45.7
1926.....	13.1	34.9	22.0	28.9	1933.....	28.4	57.1	42.2	48.2

¹ Illinois and Wisconsin.² Minnesota, Iowa, North Dakota, South Dakota, and Nebraska.³ Missouri and Kansas.

In the two eastern Corn Belt States,² the number of hogs purchased direct by packers increased from 603,000 head in 1920 to 2,379,000 in 1933 (fig. 3 and table 45). Consignments to public markets from these two States totaled 5,822,000 head in 1920 and about 6,000,000 head in 1933. Most of the increase in direct marketing in these States occurred after 1929. In 1920 only 9.4 percent of the hogs marketed from these states were sold direct, but in 1933 the proportion thus sold amounted to 28.4 percent.

In the southwestern Corn Belt States,³ the number of hogs purchased direct by packers and not going through public stockyards increased from 595,000 in 1920 to 3,324,000 in 1933, while the number sold at public markets was not markedly different in the 2 years (fig. 3 and table 45). The proportion of the hogs marketed from this area which was purchased direct by packers and which did not pass through public stockyards increased from 12.3 percent of the total marketed in 1920 to 42.2 percent in 1933. The greater part of this increase occurred after 1930. The relative increase in direct marketing was large in each of the two States comprising this group but was more marked in Missouri (fig. 4, and table 46). Approximately 363,000 hogs were marketed direct in Missouri in 1920 and did not pass through public stockyards, as compared with about 1,000,000 head in 1925, 1,600,000 in 1932, and nearly 2,300,000 in 1933. The number marketed from this State through public stockyards did not change greatly during this period. The number of hogs marketed direct in Kansas in 1920 which did not pass through public stockyards totaled 232,000 head. There was considerable fluctuation in the number thus marketed until 1929, when the trend was sharply upward. In 1933 the total marketed direct from Kansas and not going through public stockyards exceeded 1,000,000 head. The number of hogs marketed from Kansas at public stockyards in 1933 totaled 1,911,000 head, or about the same as in 1922.

The number of hogs marketed direct from the five northwestern Corn Belt States⁴ increased from 4,014,000 head in 1920 to 13,715,000

² The eastern Corn Belt States comprise Ohio, Indiana, Illinois, Michigan, and Wisconsin. Data on marketings from Indiana, Ohio, and Michigan were not available for this analysis.

³ Throughout this report the southwestern Corn Belt States means Kansas and Missouri.

⁴ Throughout this report the northwestern Corn Belt States means Iowa, Nebraska, Minnesota, North Dakota, and South Dakota.

in 1933 (fig. 3 and table 45). The increase was most marked during the years 1926 to 1931, inclusive. The number of hogs from these States that were sold at public markets increased from 12,732,000

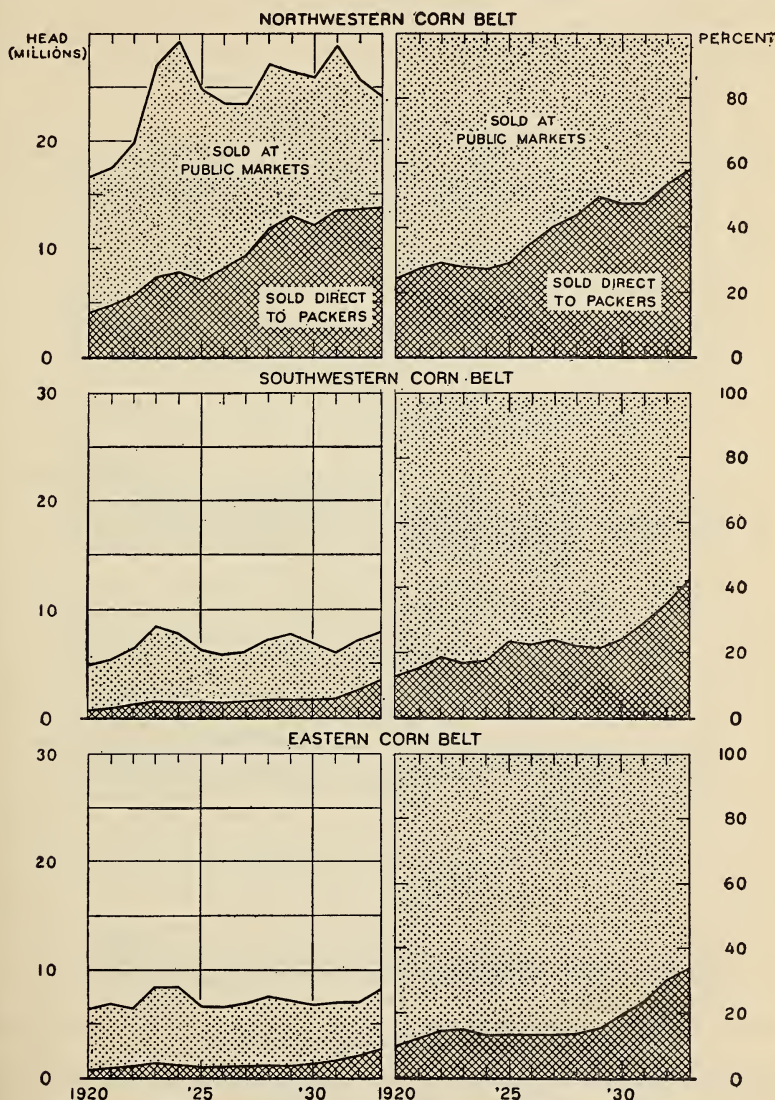


FIGURE 3.—MARKETINGS OF HOGS BY CORN BELT AREAS, 1920-33.

The 5 northwestern Corn Belt States comprise the most important hog-producing area in the United States. Nearly 60 percent of the hogs marketed from this area in 1933 were marketed direct to packers as compared with 24 percent in 1920. The proportion marketed direct from the other 2 Corn Belt areas also increased greatly, especially in more recent years.

in 1920 to 21,363,000 in 1924 and then declined to 10,296,000 in 1933. The general trend in the total number of hogs marketed in these five States was upward during this 14-year period. The trend

in the number marketed direct likewise was upward, whereas that in the number sold at public markets declined during the more recent years. The proportion sold direct increased from 24 percent of the total marketed in 1920 to 57.1 percent in 1933, with the most rapid increase taking place from 1925 to 1929. More than twice as many hogs are marketed direct from this group of States as from the other four Corn Belt States for which data are available.

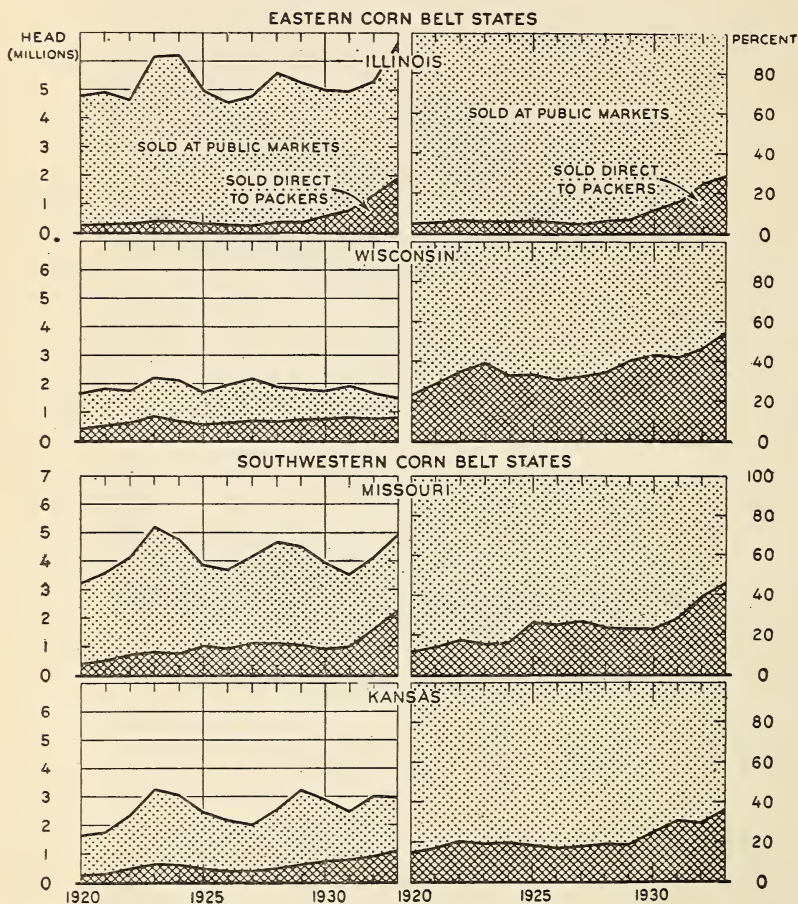


FIGURE 4.—HOG MARKETINGS FROM INDIVIDUAL STATES IN THE EASTERN AND SOUTHWESTERN CORN BELT, 1920-33.

The percentage of hogs marketed direct to packers since 1920 has increased in Illinois, Wisconsin, Missouri, and Kansas. The increase in each State was relatively greatest after 1929.

The increase in direct marketing has been very marked in each of the five States comprising the northwestern group. In 1921, only about 5 percent of the hogs from North Dakota were sold direct whereas in 1932, 62 percent were marketed by this method (fig. 5). In South Dakota less than 15 percent of the hogs were marketed direct in 1923, as compared with nearly 65 percent in 1933. In Nebraska less than 6 percent were marketed direct in 1920 and only about 15 percent in 1931, but in 1933 nearly 28 percent were sold direct.

During the years from 1921 to 1925, inclusive, about one-third of the hogs marketed in Minnesota were sold direct, but in 1933 nearly

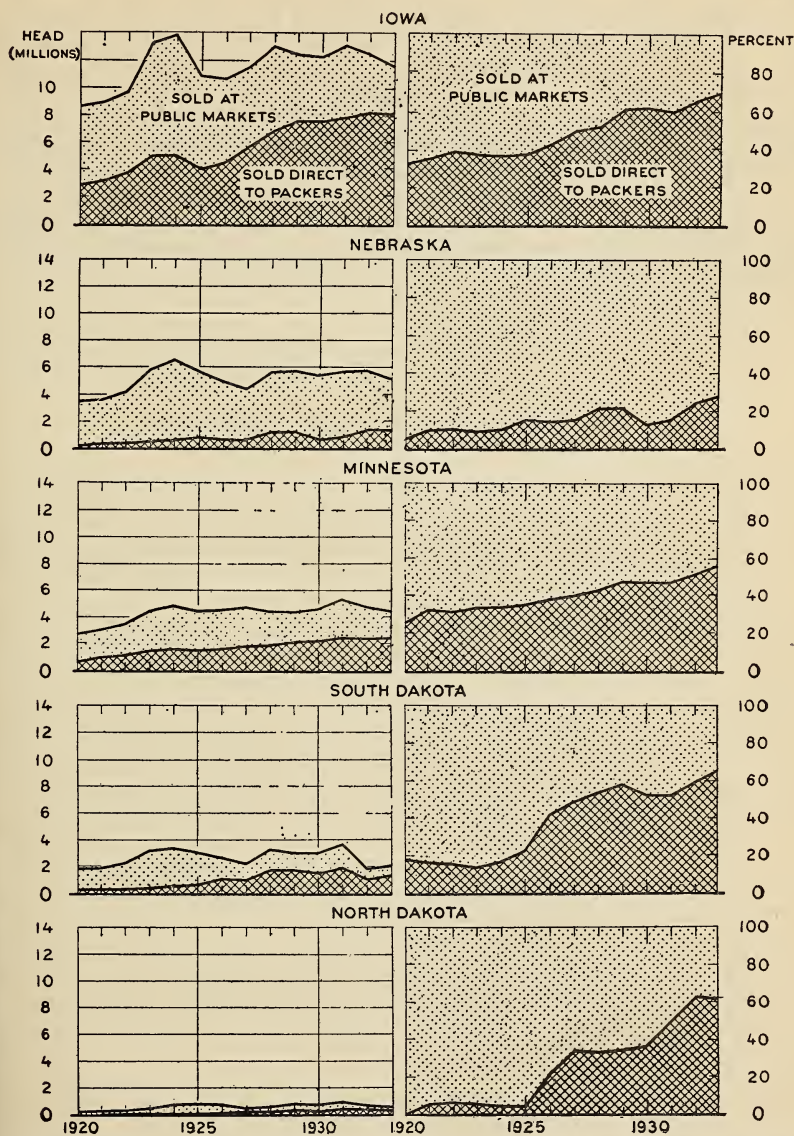


FIGURE 5.—HOG MARKETINGS FROM INDIVIDUAL STATES IN THE NORTHWESTERN CORN BELT.

There has been a very marked increase since 1920 in the number and percentage of hogs marketed direct to packers in each of the five States comprising the northwestern Corn Belt. About 70 percent of the hogs marketed from Iowa in 1933 were sold direct. In North Dakota and South Dakota more than 60 percent were marketed in this way, and in Minnesota the proportion thus marketed was only slightly below 60 percent.

55 percent were sold in this way. In Iowa about 33 percent were marketed direct in 1920 and 37 percent in 1925, but in 1928 the

proportion had increased to nearly 52 percent, and in 1933 it reached 70 percent.

In 1920, when the hogs marketed direct from the nine Corn Belt States numbered about 5,212,000 head, Iowa supplied about 54 percent of the total and Minnesota about 13 percent. None of the other States contributed as much as 10 percent. In 1933, when the number marketed direct from these nine States totaled 19,418,000 head, Iowa furnished 42 percent of the total, Minnesota about 13 percent, Missouri 12 percent, and Illinois 8 percent.

It will be observed, therefore, that direct marketing of hogs, increased greatly in each of the Corn Belt States during the period from 1920 to 1933 and that the increase was most marked in the northwestern group.

CHAPTER 2

REGIONAL SHIFTS AND CHANGES IN CORN AND HOG PRODUCTION, IN RECEIPTS OF HOGS AT PUBLIC MARKETS, AND IN HOG SLAUGHTER

Significant changes have occurred in corn and hog production during the last 25 years, and since hog production and hog marketings are closely related to corn production the data relating to geographical changes in the yearly output of corn and hogs were analyzed to ascertain the relations these changes may have had to the expansion in direct marketing of hogs.

SHIFTS IN CORN PRODUCTION

Total corn acreage in the United States has shown no upward or downward trend since 1908, although it has fluctuated somewhat from year to year. The yearly average for the period, 1909-33, is about 101,500,000 acres. The maximum acreage reported was 110,893,000 acres in 1917, and the minimum was 97,796,000 acres in 1914 (table 46). Because of marked variations in yields due to weather conditions, the annual production of corn has fluctuated more than the acreage, and there is evidence of a slightly downward trend in production during the last 30 years. The largest crop was reported in 1920, when the total exceeded 3,000,000,000 bushels. The smallest crop during the period 1908-33 was that in 1930, when production was slightly more than 2,000,000,000 bushels (table 47). Because of widespread drought, the 1934 corn crop amounted to less than 1,500,000,000 bushels. The average yearly production by 10-year periods from 1904 to 1933, was 2,701,000,000, 2,739,000,000, and 2,557,000,000 bushels, respectively.

The most pronounced changes in the acreage and production of corn from a regional standpoint are those which have occurred in the 12 North Central States. These States include the area commonly known as the "Corn Belt States". They had 60.1 percent of the total corn acreage during the 5 years 1900-1904 and 63.4 percent in the period 1929-33. In the earlier period these States produced 71.0 percent of the total crop, and in the later period their production amounted to 73.7 percent of the total. This group of States furnishes about 90 percent of the commercial supply of hogs; hence changes in the corn crop in this area have an important bearing on hog production.

Figure 6 shows graphically the changes in acreage and production of corn in the 12 Corn Belt States when grouped into three areas, together with the changes in all other States combined. In the period 1901-04 the eastern Corn Belt States had 24.2 percent of the acreage in corn and produced 32.4 percent of the crop. In 1929-33 this area had only 19.7 percent of the acreage and produced 27.3 percent of the crop. The 2 southwestern Corn Belt States had 15 percent of

the total acreage in the earlier period and produced 13.8 percent of the crop. In the later period their acreage represented 12.6 percent and their production 10.2 percent of the respective totals. The reduction in acreage and production of corn in both the southwestern and eastern Corn Belt was accompanied by marked increases in acreage and production in the northwestern Corn Belt States. The latter area had 20.9 percent of the total acreage in 1900-04, and 31.1 percent during the period 1929-33. Its production of corn in the two periods amounted to 24.9 and 36.2 percent, respectively, of the entire crop.

Corn acreage in the northwestern Corn Belt States was increased more than 60 percent between 1908 and 1932, expanding from 20,640,000 acres to nearly 34,000,000 acres. Acreage in the eastern

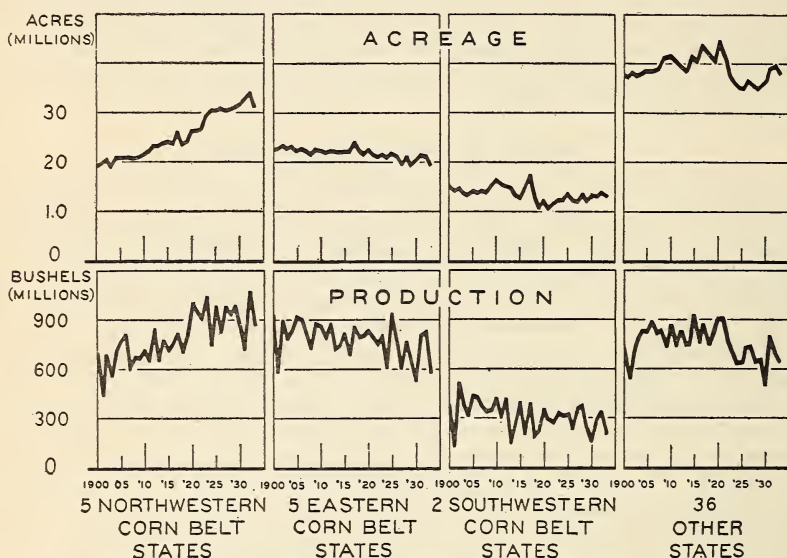


FIGURE 6.—CORN: ACREAGE AND PRODUCTION, BY AREAS, 1900-33.

Corn acreage in the 5 northwestern Corn Belt States increased more than 60 percent between 1908 and 1932, whereas acreage in the 2 other Corn Belt areas showed a slightly downward trend during this period.

Corn Belt States was reduced about 3,000,000 acres after 1904, decreasing from approximately 23,000,000 acres to less than 20,000,000 acres in 1933. In the southwestern Corn Belt States, the reduction in acreage totaled nearly 1,000,000 acres.

The relative increase in corn acreage between 1899 and 1929 was most pronounced in southern Minnesota and in southeastern South Dakota. Acreage also was largely expanded in central and western Minnesota, in southern and central North Dakota, and in Nebraska. Decreases in acreage were pronounced in southern and central Kansas, in central and northern Missouri, and in southern and southwestern Illinois. Corn production from year to year has been less regular in Kansas than in any other State because of the more variable growing conditions.

The most significant changes in corn production since 1900, therefore, were the rapid expansion in the five States comprising the northwestern Corn Belt and the decrease in the important corn-producing States of Illinois, Missouri, and Kansas, with smaller decreases in Indiana and Ohio. The causes responsible for these geographical shifts in corn production are not of primary concern in this particular study. It appears, however, that existing economic relationships made it more advantageous for the farmers in the northwestern Corn Belt States to expend their production of corn, while farmers in other parts of the Corn Belt found it to their advantage to shift to other crop enterprises. Since corn is the principal feed used in fattening hogs for market, the geographical shifts in corn production are likely to result in somewhat similar shifts in hog production and hog slaughter, and these in turn may have some relation to changes in the methods of marketing hogs.

SHIFTS IN HOG PRODUCTION

Hog production in the United States expanded steadily from the beginning of the present century until about 1924. From the high peak reached in 1923 and 1924, it declined sharply for 2 years and then tended to increase until 1934. Two statistical series can be used to show the trend of hog production—one is the numbers of hogs on farms, estimated as of January 1, and the other is commercial hog slaughter.⁵ From 1900 to 1924, the trends of these two series corresponded fairly closely, but during the last 10 years the relationship has been less marked because of the divergent trends in numbers in the Corn Belt, where most of the hogs produced go into commercial slaughter, and in other areas, especially the South and East, where most of the hogs produced are slaughtered on farms or for local consumption and for the most part do not enter commercial-slaughter channels.

Although both of these statistical series can be used when total United States production is being considered, only the series of hogs on farms can be used in studying regional and intraregional shifts, since there is no available long-time series of hog marketings or hog slaughter by States. Hence the following statements as to such shifts are based on the changes in the estimated number of hogs on farms January 1. The figures used are tentatively revised estimates, not previously published, except for the United States as a whole. In making these comparisons, 5-year averages of the estimated numbers on farms January 1, 1900–1934, inclusive, have been used—seven 5-year periods in all (table 3 and fig. 7).

In the North Atlantic States hog numbers changed little between the first and second periods, increased somewhat during the third and fourth, and decreased sharply after 1920. The average for the last period, 1930–34, was only slightly more than half as large as that for the first.

⁵ Slaughter under Federal inspection represents about 90 percent of total wholesale slaughter and for statistical purposes the figures relating to slaughter under Federal inspection are often used to represent commercial slaughter.

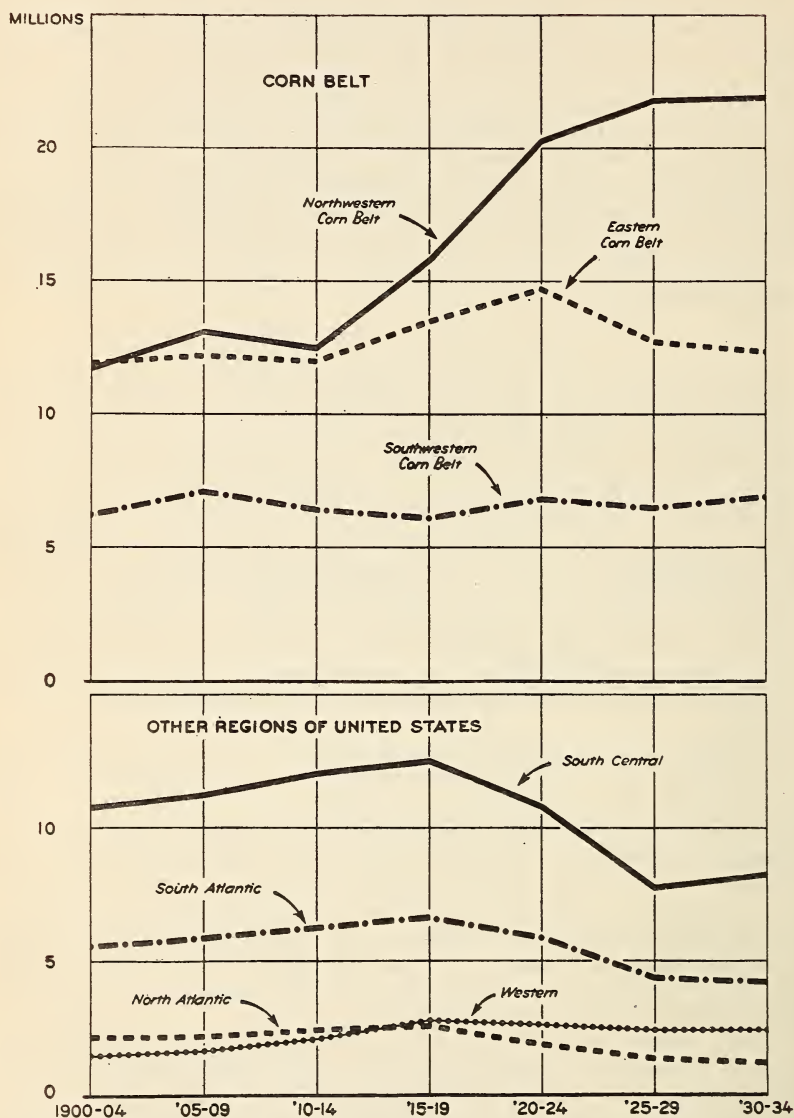


FIGURE 7.—NUMBER OF HOGS ON FARMS, JANUARY 1, BY REGIONS, AVERAGE OF 5-YEAR PERIODS, 1900-1904 TO 1930-34.

Most of the increase in hog numbers in the United States since 1914 occurred in the five northwestern Corn Belt States. Numbers in this area increased about 74 percent in the 15-year period ended in 1929.

TABLE 3.—Number of hogs on farms January 1, by regions, average of 5-year periods, 1900–34

Period	North Atlantic States	South Atlantic States	South Central States	Western States	North Central States (Corn Belt)				United States total
					East ¹	South-west ²	North-west ³	Total	
	<i>Thousands</i>	<i>Thousands</i>	<i>Thousands</i>	<i>Thousands</i>	<i>Thousands</i>	<i>Thousands</i>	<i>Thousands</i>	<i>Thousands</i>	<i>Thousands</i>
1900–1904	2, 161	5, 543	10, 758	1, 478	11, 924	6, 207	11, 689	29, 820	49, 760
1905–09	2, 191	5, 868	11, 237	1, 635	12, 219	7, 108	13, 100	32, 427	53, 358
1910–14	2, 411	6, 265	12, 041	2, 072	12, 043	6, 400	12, 524	30, 967	53, 756
1915–19	2, 582	6, 649	12, 509	2, 756	13, 465	6, 113	15, 762	35, 340	59, 836
1920–24	1, 889	5, 887	10, 803	2, 604	14, 706	6, 824	20, 253	41, 783	62, 966
1925–29	1, 330	4, 350	7, 750	2, 385	12, 699	6, 475	21, 787	40, 961	56, 776
1930–34	1, 172	4, 209	8, 268	2, 394	12, 325	6, 912	21, 917	41, 154	57, 197
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
1900–1904	4.3	11.1	21.6	3.0	24.0	12.5	23.5	59.9	100.0
1905–09	4.1	11.0	21.0	3.1	22.9	13.3	24.6	60.8	100.0
1910–14	4.5	11.6	22.4	3.9	22.4	11.9	23.3	57.6	100.0
1915–19	4.3	11.1	20.9	4.6	22.6	10.2	26.3	59.1	100.0
1920–24	3.0	9.3	17.2	4.1	23.4	10.8	32.2	66.4	100.0
1925–29	2.3	7.7	13.7	4.2	22.4	11.4	38.3	72.1	100.0
1930–34	2.0	7.4	14.4	4.2	21.6	12.1	38.3	72.0	100.0

¹ Ohio, Indiana, Illinois, Michigan, and Wisconsin.² Kansas and Missouri.³ Minnesota, Iowa, Nebraska, North Dakota, and South Dakota.

In the South Atlantic States the trend in numbers was upward until about 1919, and has since been downward. The average for the last period, 1930–34, was only about 75 percent as great as that for the first period.

The trend of numbers in the South Central States was very similar to that in the South Atlantic States. There was an upward trend during the first 20 years, the peak being reached at the close of the World War. The trend was then sharply downward to 1930, followed by a slight increase during the last 5 years. Numbers in the most recent 5-year period, however, were only 77 percent as large as those of the first period.

In the Western States, numbers increased steadily from 1900 to about 1920, with little of the cyclical swings evident in the other regions. Since 1920, numbers have been maintained slightly below the peak reached during the war period, with some evidence of cyclical change similar to that of other regions.

Most of the commercial supply of hogs is raised in the 12 North Central States, and changes in both commercial and total slaughter reflect closely the changes in hog production in these States. Hog production, as measured by numbers on farms, has increased considerably in this area during the present century, but the greater part of this increase has taken place during the last 20 years. Between the first and third 5-year periods numbers increased less than 4 percent, but between the third and fifth (1910–14 to 1920–24) they increased about 35 percent. Between the fifth and seventh periods there was a decrease of less than 2 percent.

When the figures for the North Central States are segregated so that they can be studied by geographical groups, a marked difference in trends is found. In the eastern Corn Belt States, there was relatively little change in numbers during the three 5-year periods prior to the World War. In the next two 5-year periods, however, there

was an increase of about 22 percent, but this was practically all eliminated in the last two such periods.

In the two southwestern Corn Belt States, hog numbers have fluctuated considerably without showing any definite upward or downward trend. Numbers in this area averaged the largest during the period 1905-9, and the smallest during the period of the World War. In the last 5-year period, 1930-34, they were nearly 3 percent smaller than in the peak period of 25 years earlier.

The greatest change in hog numbers in the last 35 years has been in the northwestern Corn Belt States. Practically all the increase in hog production in the United States since 1910 has been confined to this area and the Western States. It was in these two areas that corn production was expanded greatly while reductions were taking place in other areas. Most of the increase in hog numbers in the northwestern Corn Belt States occurred during the 15-year period ended in 1929. The increase during this period amounted to about 74 percent. In the preceding discussion of shifts in corn production, mention was made of the fact that corn acreage in this area increased 60 percent from 1908 to 1932.

As a result of these changes in hog numbers in the different areas the five northwestern Corn Belt States during the last 10 years have had more than 38 percent of the total number in the country as compared with less than 25 percent in the period, 1900-1914. The proportion of the United States total in the Western States increased from 3 percent to slightly more than 4 percent in the last 30 years, whereas in all other areas the relative proportions have declined.

Although hog production expanded in most of the Corn Belt States during the war years, the rate of increase was much more rapid in the five States comprising the northwestern group than in the other States. Likewise the expansion between 1920 and the peak production years of 1923 and 1924 was much greater in the northwestern area, and the drop from the peak was relatively much less in this area than in the eastern Corn Belt. The rapid growth of direct marketing in the northwestern Corn Belt States followed the sharp increase in hog production in that area in 1923 and 1924, and the practice continued to grow as hog numbers in that area were maintained at a level not much below that of the peak period. Later in this report it will be shown that the increase in hog production in the northwestern Corn Belt States was accompanied by a very marked increase in hog slaughter in that area; also that most of the packers operating in that area obtain the bulk of their hog supplies through direct purchase.

TREND IN RECEIPTS OF LIVESTOCK AT THE MORE IMPORTANT PUBLIC MARKETS

The first of the existing large public livestock markets was opened for business in Chicago in 1865, and most of the other leading markets were established prior to 1900. Since these markets were established primarily for the purpose of providing facilities for the handling and care of livestock intended largely for sale to wholesale slaughterers, some consideration is here given to the evidence indicating their growth or decline and whether the shift to direct marketing has materially affected their volume of business.

Among the leading public livestock markets, there are seven in the North Central States (Corn Belt) that are usually ranked as of out-

standing importance because of the relatively large receipts of livestock handled. These are located in Chicago, Kansas City, Omaha, East St. Louis (National Stockyards), South St. Paul, South St. Joseph, and Sioux City. Other important Corn Belt public markets are located in Indianapolis, Milwaukee, Cincinnati, and Cleveland. Nearby, but outside of the Corn Belt, are public markets in Buffalo and Pittsburgh, both of which obtain most of their supplies from the Corn Belt.

The 2 largest public markets outside of the Corn Belt are located in Fort Worth and Denver. These 2, however, are more important as cattle and sheep markets than as hog markets, and they get most of their receipts from outside of the Corn Belt. The combined yearly receipts of livestock at these 2 markets, together with those at the 7 large Corn Belt markets first named, were compared with the total yearly wholesale slaughter⁶ for the entire country to ascertain how the increase in direct selling and buying has affected actual and relative receipts at these markets.

The variations in the combined yearly receipts of hogs at these nine markets for the period 1900-33 (table 48) reflect roughly the cycles of hog production. The trend in receipts was upward until 1924, which is the record year of total hog slaughter. During each of the 27 years, 1900-26, the total yearly receipts of hogs at these nine markets were equal to at least 50 percent, or more, of the total estimated wholesale slaughter, and ranged from about 50 to 59 percent. Since 1924 hog production has been on a somewhat lower level than that reached in 1923 and 1924, and during this period the ratio of receipts at these nine markets to wholesale slaughter declined considerably, falling to 40.5 percent in 1932.

The combined yearly receipts of cattle and calves at these nine large public markets have reflected to a large extent the changes in the cattle-production cycle, which averages about 16 years in length. The average annual cattle receipts at these nine markets since 1915 have exceeded the average for the period 1900-15. Wholesale slaughter of cattle and calves during the 34-year period, however, has shown a much greater relative increase than have the receipts at the nine markets.⁷ From 1900 to 1911, the receipts at these markets exceeded wholesale slaughter but since 1911 there have been only 2 years when this was true. These were 1914 and 1916 (table 48). Since 1916, the receipts, with the exception of those in 1920, have been equivalent to less than 90 percent of the wholesale slaughter. In 1933, they were the equivalent of only 63.9 percent of wholesale slaughter. This reduction in the ratio of receipts at these markets to wholesale slaughter has been due in part to the growth of other livestock markets, which in recent years have received a considerable proportion of the cattle and calves marketed, and in part to the fact that there has been a decline in the proportion of unfinished cattle marketed through public markets in recent years. In other words, there has been a tendency in recent years for cattle finishers to obtain an increasing proportion

⁶ Wholesale slaughter is the total wholesale slaughter (inspected and noninspected) as reported by the United States Census of Manufactures for certain years and the estimated total of such slaughter for the intervening years not reported.

⁷ A large part of the receipts of cattle and calves at the public markets consist of animals that are returned to the country for further feeding or grazing. Such receipts also include shipments from one market to another, which therefore are counted more than once.

of their stocker and feeder cattle from sources other than public markets. At the same time, the proportion of slaughter cattle and calves marketed direct also has increased.

The trends in production, slaughter, and market receipts of sheep and lambs have been distinctly upward since 1900 (table 48). The ratio of receipts at the nine public markets to total wholesale slaughter of sheep and lambs has varied considerably throughout the period. Prior to 1921 there were 7 years in which receipts⁸ at these markets were greater than the total wholesale slaughter, although in 1900 and 1901 they were the equivalent of only about three-fourths of the total wholesale slaughter. In most years since 1920 they have been the equivalent of more than 90 percent of the wholesale slaughter, but in 1932 and 1933 they were the equivalent of only slightly more than 70 percent of the wholesale slaughter.

In summarizing the trend in livestock receipts at the nine principal markets and the relation of these receipts to wholesale slaughter, it may be said that the number of hogs received in 1933 was about the same as in 1922 but was 32 percent greater than in 1900; receipts of cattle and calves in 1933 were 27 percent less than in 1922 but were 43 percent greater than in 1900; and receipts of sheep and lambs in 1933 were about 25 percent greater than in 1922 and more than twice as great as in 1900. Hog receipts at these nine markets were equivalent to about the same proportion of total wholesale slaughter in 1924 as in 1900, but this proportion decreased thereafter; receipts of cattle and calves increased with total wholesale slaughter from 1900 to 1916, but there was a sharp decline in the ratio of receipts to slaughter during subsequent years; sheep and lamb receipts increased much more rapidly than total wholesale slaughter from 1900 to 1919, but less rapidly after the latter year.

Comparisons of combined market receipts at all public markets with total wholesale slaughter similar to those made with respect to receipts at the nine principal markets if presented would show practically the same trends as were indicated for the nine markets. It is apparent from these comparisons, however, that the volume of livestock business handled at the public markets has been affected considerably by the growth in direct marketing which has taken place since 1924. The decline in the ratio of market receipts to wholesale slaughter indicates in a general way the extent to which there has been a shift away from public markets in the marketing of cattle, hogs, and sheep during the last decade.

TREND OF HOG RECEIPTS AT INDIVIDUAL PUBLIC MARKETS IN RELATION TO DIRECT MARKETING

The trend and variations in livestock receipts at a particular market may differ considerably from those at other markets with which it may be combined to form a group. Such differences may reflect either shifts in production or in methods of marketing. A study made of the trend in hog receipts at each of the nine principal markets previously discussed reveals that some very significant changes have

⁸ Market receipts of sheep and lambs, like those of cattle, include a considerable number of animals that are shipped out for feeding or grazing and animals that are shipped from one market to another.

occurred at some of these markets during recent years in the relative proportions of hogs received for sale and in those consigned direct to packers located at those markets. These changes have been most pronounced at Chicago, Kansas City, and East St. Louis.

Total hog receipts as reported for nearly all public markets include not only hogs consigned there for sale and those unloaded at the yards for feed and rest in transit but also those hogs purchased direct by packers which move through the public yards. In addition to the hogs received at the public yards, there are certain public-market cities where packers receive consignments of direct purchases at their own private yards. These hogs are not included in the reported receipts at any public market, but they are important in appraising the status of a given market center. Consequently an analysis of receipts at a given market involves not only the trend in the total receipts as reported for that market but also the relationship between the combined number of direct receipts passing through the public yards and those received outside the public yards to the number of hogs consigned for sale on the market.

CHICAGO

The yearly total receipts of hogs at the Chicago public stockyards from 1900 to 1933 have fluctuated around a somewhat level trend, and with the exception of a few years the reported annual total has ranged between 7,000,000 and 9,000,000 head (table 49). When compared with the yearly wholesale slaughter of hogs for the entire country, however, it will be found that the ratio of these receipts to such slaughter has decreased considerably (table 50). In 1933 these receipts were the equivalent of only 13.3 percent of the national wholesale slaughter as compared with 24.3 percent in 1900.

Since 1927 the number of hogs purchased direct for slaughter by Chicago packing plants has increased greatly (table 4 and fig. 8). A very large part of such purchases are unloaded at the local public stockyards and are included in the reported receipts of those yards.⁹ In 1920 the direct purchases which were included in the reported receipts totaled about 199,000 head, or 2.5 percent of the total number of all hogs arriving at Chicago (stockyards receipts plus receipts outside the yards). In 1933 the direct purchases which were included in the reported receipts of the public stockyards totaled 3,102,000 head and comprised 35.6 percent of the total hogs arriving in Chicago, which included 963,000 pigs and sows received and slaughtered for Government account in connection with the emergency hog-reduction program. The greater part of this increase in the direct purchases delivered through the local public yards occurred after 1928.

⁹ Hogs purchased at other public markets by Chicago packers are reported as "directs" by the public stockyards company when delivered through the yards to the Chicago plants and hence are included in these figures. As indicated in the definition of direct marketing these are not direct hogs. However, the number purchased in this manner by Chicago packers, or packers located at the other public markets included in this section, represents a comparatively small proportion of the total receipts at these markets.

TABLE 4.—*Hog receipts at Chicago and at Kansas City: Number and percentage distribution of hogs received at the public stockyards for sale and by packers direct, 1920-33*

CHICAGO

Year	Received at public stock-yards for sale	Received direct by packers			Total receipts ¹	Percentage received			
		Through public stock-yards	Not through public stock-yards	Total		At public stock-yards for sale	Direct by packers		
							Through public stock-yards	Not through public stock-yards	Total
	1,000 head	1,000 head	1,000 head	1,000 head	1,000 head	Percent	Percent	Percent	Percent
1920 -----	7,327	199	308	507	7,834	93.6	2.5	3.9	6.4
1921 -----	7,884	264	339	603	8,487	92.9	3.1	4.0	7.1
1922 -----	7,769	387	406	793	8,562	90.7	4.5	4.8	9.3
1923 -----	10,041	419	571	990	11,031	91.0	3.8	5.2	9.0
1924 -----	10,305	139	625	764	11,069	93.1	1.2	5.7	6.9
1925 -----	7,646	350	482	832	8,478	90.2	4.1	5.7	9.8
1926 -----	6,765	328	462	790	7,555	89.6	4.3	6.1	10.4
1927 -----	7,143	581	560	1,141	8,284	86.2	7.0	6.8	13.8
1928 -----	7,562	977	824	1,801	9,363	80.8	10.4	8.8	19.2
1929 -----	5,846	2,347	966	3,313	9,159	63.9	25.6	10.5	36.1
1930 -----	5,145	2,725	777	3,502	8,647	59.5	31.5	9.0	40.5
1931 -----	5,275	2,667	652	3,319	8,594	61.4	31.0	7.6	38.6
1932 -----	4,323	2,279	810	3,089	7,412	58.3	30.8	10.9	41.7
1933 -----	² 4,690	3,102	923	4,025	² 8,715	53.8	35.6	10.6	46.2

KANSAS CITY

Year									
1920	2,435	32	446	478	2,913	83.6	1.1	15.3	16.4
1921	2,051	154	652	806	2,857	71.8	5.4	22.8	28.2
1922	2,468	187	1,107	1,294	3,762	65.6	5.0	29.4	34.4
1923	3,283	333	1,510	1,843	5,126	64.0	6.5	29.5	36.0
1924	2,637	296	1,287	1,583	4,220	62.5	7.0	30.5	37.5
1925	1,885	182	1,025	1,207	3,092	60.9	5.9	33.2	39.1
1926	1,811	165	741	906	2,777	67.4	5.9	26.7	32.6
1927	1,677	227	962	1,189	2,866	58.5	7.9	33.6	41.5
1928	2,068	324	1,658	1,982	4,050	51.0	8.0	41.0	49.0
1929	2,203	273	1,679	1,952	4,155	53.0	6.6	40.4	47.0
1930	1,855	160	1,185	1,345	3,200	58.0	5.0	37.0	42.0
1931	1,157	180	1,479	1,659	2,816	41.1	6.4	52.5	58.9
1932	1,173	183	1,878	2,061	3,234	36.3	5.7	58.0	63.7
1933	³ 1,850	228	1,843	2,071	³ 3,921	47.2	5.8	47.0	52.8

¹ Includes receipts at public stockyards and direct to packers not passing through the yards.² Includes total of 963,000 pigs and sows slaughtered for account of Federal Government.³ Includes total of 832,000 pigs and sows slaughtered for account of Federal Government.

Direct purchases of hogs for Chicago packing plants, which were unloaded at the private yards in that city, totaled 308,000 head in 1920 and 923,000 in 1933. If these are included with the direct purchases which were unloaded at the public yards, the combined total constituted 46.2 percent of the total number of hogs arriving in Chicago in 1933 as compared with 6.4 percent in 1920. In 1920 the hogs arriving at the public yards for sale constituted 93.6 percent of the total Chicago supply, but in 1933 they comprised only 53.8 percent of the total.

KANSAS CITY

The reported yearly hog receipts at the Kansas City market have always tended to fluctuate more than at some of the other markets because of the marked variations in hog production in the territory which sends hogs to that market (table 49). This variation in hog production is caused primarily by the wide fluctuations in feed-

crop production in much of the Kansas City territory which are usually the result of extreme variations in annual rainfall.

As compared with total wholesale slaughter for the entire country, the receipts at the Kansas City public yards were the equivalent of 9.3 percent of such slaughter in 1900 and less than 3 percent in 1931 and 1932 (table 50).

The yearly receipts at the Kansas City public stockyards as at Chicago, include hogs consigned to the local commission agencies for sale and direct purchases billed to the local packers which pass through these yards. They do not include those direct purchases which are delivered at private yards. Hogs bought direct and unloaded at the public yards increased from 32,000 head in 1920 to 228,000 in 1933, while those delivered at private yards increased from 446,000 to 1,843,000 (table 4).

Direct purchases of hogs unloaded at the public yards at Kansas City represented 1.1 percent of the total Kansas City supply in 1920

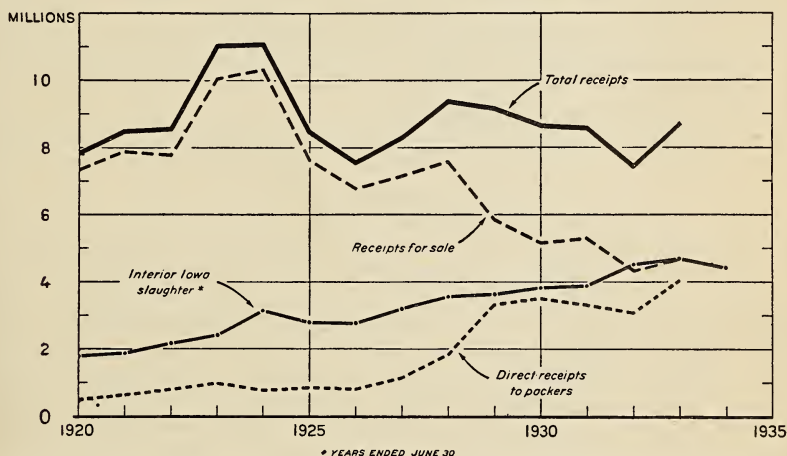


FIGURE 8.—HOG RECEIPTS AT CHICAGO AND HOG SLAUGHTER AT INTERIOR IOWA POINTS, 1920-33.

Total yearly receipts of hogs at Chicago from 1925 to 1933 did not vary greatly. A sharp decrease in the number received for sale was offset by the increase in the number received direct by Chicago packers. During the same period hog slaughter in interior packing plants in Iowa also increased materially.

and 5.7 percent in 1932; those delivered at private yards increased from 15.3 percent of the total supply to 58 percent. Thus, total direct purchases arriving at Kansas City increased from 16.4 percent of the total supply to 63.7 percent during the period 1920-32. The proportion representing hogs for sale at the public market dropped from 83.6 percent of the total supply to 36.3 percent.

OMAHA

The trend in reported hog receipts at the Omaha public stockyards was upward from 1900 to 1933 (table 49), and receipts during the last 10 years averaged 39 percent more than those during the first 10 years of the period. Unlike those at Chicago and Kansas City, the yearly receipts of hogs at Omaha have maintained throughout the period a fairly uniform relationship to the yearly wholesale slaughter for the entire country (table 50).

One reason for the growth in hog receipts at Omaha is that hog production in the area contiguous to that market has increased at a much more rapid rate than in the supply areas of some of the other markets. Furthermore, Omaha has had to meet less competition than some of the other markets from interior packing plants which obtain most of their hogs by direct purchase, as there have never been more than 2 or 3 such plants located in its supply territory. The largest discontinued operations in 1932, and the 1 or 2 now operating do only a very small volume of business.

In contrast with practices at Chicago and Kansas City, the supplies of hogs for the packing plants at Omaha have generally been acquired at the local public market and very few have been obtained through direct purchase (table 5). All the packing plants at Omaha are located near the public stockyards.

EAST ST. LOUIS (NATIONAL STOCKYARDS, ILL.)

The trend of reported hog receipts at East St. Louis was upward from 1900 to 1928, but the peak years were 1923 and 1924 (table 49). Since 1928 receipts at that market have declined steadily, except for an increase in 1933 which resulted from the very large movement of pigs through the public markets when the Federal emergency hog-reduction program was in operation.

The growth in reported hog receipts at the East St. Louis public stockyards from 1900 to about 1920 was at a slightly more rapid rate than the growth in national wholesale slaughter of hogs, but since 1920 the volume has not kept pace with such slaughter (table 50). The principal reason for the more rapid expansion in receipts at East St. Louis, as contrasted with those at Chicago and Kansas City, probably lies in the fact that the East St. Louis market for many years has been known as a very important shipping market. In other words, a large proportion of its receipts consist of lightweight hogs especially suitable for the eastern fresh-pork trade, and the eastern packers have usually been active buyers on that market. This has tended to attract supplies of such hogs from a considerable area and even from other markets.

TABLE 5.—*Hogs: Total number received and number and percentage received direct by packers, Omaha, East St. Louis, and Denver, 1920-33*

Year	Omaha			East St. Louis			Denver		
	Total receipts	Received by packers direct	Percentage received direct	Total receipts	Received by packers direct	Percentage received direct	Total receipts	Received by packers direct	Percentage received direct
	Thousands	Thousands	Percent	Thousands	Thousands	Percent	Thousands	Thousands	Percent
1920.....	2,708	46	1.7	3,399	294	8.6	-----	-----	-----
1921.....	2,665	19	.7	3,330	222	6.7	-----	-----	-----
1922.....	2,839	90	3.2	3,606	213	5.9	-----	-----	-----
1923.....	3,649	59	1.6	4,831	377	7.8	-----	-----	-----
1924.....	3,978	12	.3	4,580	181	4.0	-----	-----	-----
1925.....	3,355	6	.2	3,512	130	3.7	-----	-----	-----
1926.....	2,647	17	.7	3,536	173	4.9	497	170	34.2
1927.....	2,631	5	.2	3,710	118	3.2	457	119	26.0
1928.....	3,179	27	.9	4,036	224	5.6	567	147	25.9
1929.....	3,166	272	8.6	3,865	285	7.4	539	150	27.8
1930.....	3,363	26	.8	3,459	294	8.5	512	148	28.9
1931.....	3,525	32	.9	2,970	261	8.8	597	110	18.4
1932.....	3,078	9	.3	2,626	196	7.5	652	112	17.2
1933.....	1 2,951	10	.3	1 3,327	333	10.0	1 711	-----	-----

¹ Including pigs and sows slaughtered on Government account, totaling 377,552 at Omaha, 531,213 at East St. Louis, and 61,617 at Denver.

Data for East St. Louis and Denver from annual reports of stockyards companies to the Packer and Stockyards Administration.

There are several packing plants located in St. Louis, Mo., on the opposite side of the Mississippi River from the East St. Louis public stockyards. Some of these plants get a large proportion of their hogs through direct purchase, whereas the others obtain all or most of their supply at public markets. Hogs purchased on the East St. Louis market for the plants in St. Louis must be transported by rail or motor truck from that market to the plants. The plants east of the river and adjacent to the East St. Louis market obtain the larger part of their slaughter supplies on that market. Their direct purchases delivered through the local public-market yards represented 8.6 percent of the total hog receipts at those yards in 1920 but only 3.2 percent in 1927. In the years since 1927, the proportion has increased; it amounted to 10 percent in 1933.

ST. JOSEPH

The trend in reported hog receipts at the public market located at St. Joseph, Mo., has been somewhat like that at Omaha as the two markets serve the same territory to a considerable extent. Average yearly receipts since the World War have not been greatly different from the average of pre-war years 1900-14 (table 49). The ratio of receipts to the national wholesale slaughter declined, therefore (table 50). The packing plants located at the St. Joseph market apparently get all their hogs from the local public markets.

SOUTH ST. PAUL

Reported hog receipts at the South St. Paul public market have increased greatly since 1900, as has also the ratio of these receipts to the national wholesale slaughter (tables 49 and 50). In 1926 the receipts at that market were the equivalent of 7.6 percent of national wholesale slaughter, as contrasted with 1.5 percent in 1900. The ratio of receipts to wholesale slaughter has since ranged around 5 percent. The great expansion in hog production in the St. Paul territory accounts largely for the increasing number of hogs received at that market from 1900 to 1924.

Comparatively few hogs are purchased direct for the packing plants adjacent to the South St. Paul public-market yards; hence practically all of the receipts at that market represent hogs to be sold through commission selling agencies. There are, however, two slaughtering plants not far distant from the local public market which obtain the greater portion of their hogs through direct purchase. These plants are situated somewhat like those in St. Louis, Mo., being on the opposite side of the Mississippi River from the public market, and if hogs were bought at the local public market they would have to be moved a considerable distance to these plants. The extensive direct purchases at one of these plants, together with the increased slaughter at some of the interior plants located in the South St. Paul supply area, have tended to curtail the volume of receipts handled at South St. Paul in recent years, and hence have reduced the number of hogs for sale there through the commission selling agencies.

SIoux CITY

The Sioux City public market draws its hog supplies from somewhat the same area as does Omaha, and, like that market, its receipts showed a distinct upward trend from 1900 to 1924 (table 49).

The rate of growth in receipts at this market to 1924 was more rapid than the increase in national wholesale slaughter of hogs as indicated by the fact that in 1900 these receipts were the equivalent of 2.5 percent of such slaughter and in 1924 the figure was 6.2 percent (table 50). In 1932 and 1933, however, they were the equivalent of only 3.9 percent of the national slaughter. The decrease in the proportion in these two latter years was caused primarily by drought conditions which resulted in greatly reduced production of hogs in Sioux City's supply area.

The packing plants located at Sioux City are closely adjacent to the local public yards, and they obtain practically all their hog supplies on that market; hence very few direct purchases are received there. In this respect this market is similar to the Omaha and St. Joseph markets.

DENVER AND FORTH WORTH

Denver and Fort Worth are located outside the Corn Belt and in territory that produces relatively few hogs; consequently both rank far below the markets previously discussed in the volume of hog receipts handled. The trend of reported receipts at Denver, however, has been generally upward since 1900 and the rate of increase has been more rapid than the growth in national wholesale slaughter (tables 49 and 50). Information as to the number of hogs purchased direct for the packing plants at Denver and passing through the local public yards is available only for the period 1926-32. The proportion of such purchases in the total receipts declined during this period (table 5). In 1926 they comprised 34.2 percent of the total receipts and in 1932 only 17.2 percent. Most of these direct purchases are obtained outside of the Denver supply area. In more recent years hog production in this area has increased, and this probably accounts for the decrease in direct purchases for the local plants.

The Fort Worth public market has never been relatively important as a hog market, and its receipts have fluctuated rather widely (table 49). The published reports of receipts at this market do not segregate hogs purchased direct for local packing plants that pass through the public yards from those received for sale; hence it is not possible to show the proportion of such direct purchases in the total receipts. The two larger packing plants located there, however, at times obtain part of their hog supply from sources other than the local public yards. Such hogs in some instances are hogs purchased at other markets, but they also include at times hogs purchased at points other than public markets.

RELATIONSHIP OF DIRECT MARKETING TO THE BUSINESS OF THE PUBLIC-MARKET AGENCIES

The foregoing analysis shows that the volume of business of the public stockyards markets has been materially affected by the increase in the number of hogs marketed direct. But not all markets have been affected alike. In the case of some markets the trend in receipts has kept pace with that of national slaughter; in others there has been a decline in receipts, both actually and in relation to slaughter.

In some instances the receipts as reported include a considerable proportion of hogs which are purchased direct and which are not offered for sale at the markets where received. In other instances some of the packing plants located at or near the public markets get

all or a considerable proportion of their hog supply through direct purchase, and such hogs are delivered to the plants without passing through the local public yards and hence are not counted in the receipts of those yards. The stockyard company usually receives the regular yardage fee on direct purchases which pass through the public yards en route to the packing plants, but since these hogs ordinarily are not fed after arrival there is no revenue from the sale of feed which would be obtained if the hogs were received for sale. Obviously no yardage fees are paid to public-stockyard companies on direct purchases of hogs delivered to the packing plants without passing through the public yards. The growth in direct marketing, therefore, apparently has reduced the gross income of some of the public-stockyard operators.

The reduction in the number of hogs received at the public markets for sale has undoubtedly reduced the gross income of livestock commission sales agencies, order buyers, and speculators operating on the public markets, since during the last decade the tendency has been for reductions rather than increases in commission charges. There is no evidence that any appreciable number of public markets have discontinued operations, and the records of the Packers and Stockyards Administration show that there has been no reduction in the number of livestock commission sales agencies operating at the public markets during the last decade. The average yearly volume of business handled by these agencies, therefore, has tended to decline as the volume of direct marketing has increased.

DIRECT MARKETING IN RELATION TO COOPERATIVE LIVESTOCK SHIPPING ASSOCIATIONS

Mention was made of the fact that the methods of marketing livestock used by producers were often determined by their own efforts, either individually or through organization, to reduce marketing costs and thereby obtain greater net returns on their livestock. Mention also was made of the organization of cooperative livestock shipping associations and of the fact that at one time it appeared that these associations might largely replace the country buyers who for many years had played an important part in the marketing of livestock. The first of these associations of record was organized in Nebraska in 1883, but it was not until after the outbreak of the World War that cooperative shipping associations became important in the marketing of livestock. Available records (16) indicate that there were 90 shipping associations in active operation in 1910 and 184 in 1913. The number then increased to 1,040 in 1919 and reached a maximum of 2,029 in 1924. After 1924, the number declined steadily to 1,575 in 1933.

The increase in shipping associations resulted primarily from the belief of producers that the prices paid them by the local buyers were too low in relation to the prices the latter received at the public markets. By organizing their own shipping association and employing a manager to look after assembling, loading, and shipping their stock to market in carload lots, producers believed they could obtain a larger net return than they could when they sold to the local buyers. The shipping-association movement, therefore, was an organized effort on the part of livestock producers to change their marketing methods. Later, they indicated their desire for further change by

organizing their own commission-selling agencies at the public markets. The first attempt of this kind was made in 1889, but it was not until 1917 that their efforts in this field met with success. Since the World War such selling agencies have been established at most of the important public markets.

Since the number of shipping associations decreased greatly during the period when direct marketing was rapidly increasing, there has been a tendency to conclude that this method of marketing was the principal reason for these associations going out of business. Though the available data do not permit a detailed analysis as to the reasons for the discontinuance of the associations that are no longer in operation, there is evidence that in many instances factors other than direct marketing caused them to go out of business. Many of the shipping associations now in operation are in the territory where direct buying and selling is being carried on most extensively. Furthermore, many of these associations are engaged in selling livestock direct to packers for their producer members. Operators of 17 packing plants in the northwestern Corn Belt States reported that 10.4 percent of the 7,900,000 hogs bought direct for these plants in 1933 was obtained from cooperative shipping associations. In the eastern Corn Belt, operators of 35 plants handling 5,924,000 hogs bought direct in 1933 purchased 3.8 percent of these hogs from cooperative shipping associations. Operators of 5 plants in Minnesota reported the purchase of 530,567 hogs, or 24.1 percent of their "direct" hogs, from cooperative associations, and 13 plants in Ohio reported the purchase of 14.2 percent of their "direct" hogs from such associations.

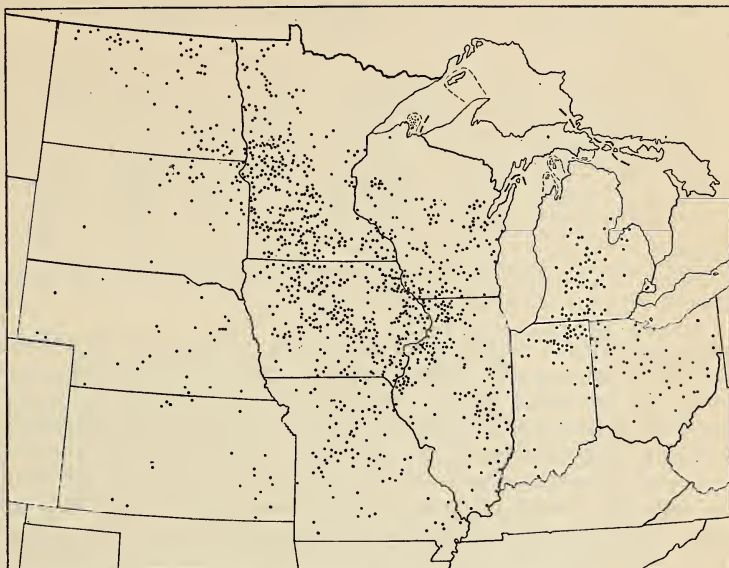
The largest number and the highest percentage of associations that went out of business in Minnesota were those within trucking distances of the South St. Paul public market. The number of associations going out of business in that State which were near the concentration yards where direct buying is done was relatively small. Figure 9 shows the distribution of active cooperative livestock shipping associations in the 12 Corn Belt States, and the location of those which have discontinued operations since their organization. It will be noted that the greatest mortality among these associations was in those nearest the public livestock markets and in those States where direct buying of hogs by packers has been less important.

Cooperative shipping associations are not the only cooperative commodity marketing associations which have discontinued operations in recent years. Fully as heavy mortality is noted in associations which handle grain, dairy products, and fruits and vegetables (16, p. 69). Since direct marketing was not involved in the discontinuance of these other commodity associations there is no reason for concluding that it was the primary reason for the livestock shipping associations' going out of business.

There is evidence that in addition to the decrease in the number of shipping associations in active operation there has been a decline in the volume of business handled by those now functioning. The number of each species of livestock handled yearly by 54 cooperative livestock shipping associations in the Corn Belt during the periods 1924-27 and 1930-33 are shown in table 6. During the period 1924-27 the number of animals handled by these associations increased actually and in relation to total federally inspected slaughter. In the 4 years 1930-33, however, the number of animals handled

LIVESTOCK SHIPPING ASSOCIATIONS IN 12 CORN BELT STATES

ACTIVE ASSOCIATIONS



ASSOCIATIONS WHICH HAVE PASSED OUT OF EXISTENCE SINCE 1910

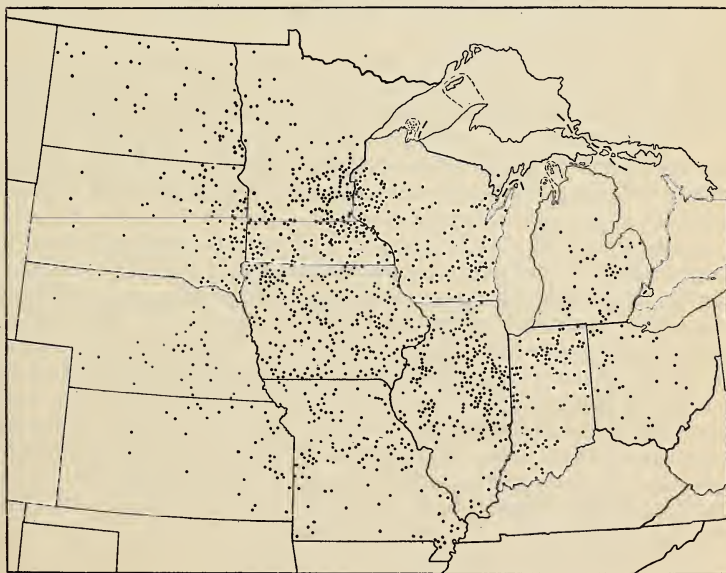


FIGURE 9.—LOCATION OF ACTIVE AND DISCONTINUED COOPERATIVE LIVESTOCK SHIPPING ASSOCIATIONS IN THE 12 CORN BELT STATES.

Many cooperative livestock shipping associations have discontinued operations during the last 10 years. The greatest mortality among these associations appears to have been among those nearest the public livestock markets and those in States where direct buying of hogs has been less important.

decreased both actually and relatively as compared with the number handled in the earlier period.

TABLE 6.—*Average number of livestock handled yearly by 54 livestock shipping associations in the Corn Belt, 1924-27 and 1930-33*

Year	Hogs	Cattle and calves	Sheep and lambs	Year	Hogs	Cattle and calves	Sheep and lambs
	<i>Number</i>	<i>Number</i>	<i>Number</i>		<i>Number</i>	<i>Number</i>	<i>Number</i>
1924.....	9, 831	1, 549	818	1930.....	9, 997	1, 846	1, 422
1925.....	9, 342	1, 639	937	1931.....	9, 223	1, 737	1, 127
1926.....	9, 768	1, 880	1, 027	1932.....	7, 559	1, 469	939
1927.....	11, 452	1, 898	1, 219	1933.....	7, 911	1, 171	793
Average.....	10, 098	1, 742	1, 000	Average.....	8, 672	1, 556	1, 070

Compiled from records of the Farm Credit Administration.

Factors that have contributed materially to the increased mortality of livestock shipping associations and to the decline in the volume of business of those which still operate are the increased mileage of hard-surfaced roads and the increased number and greater adaptability of trucks for hauling livestock (pp. 77 to 78). These factors have resulted in an increasing proportion of livestock being moved by truck to public markets, packing plants, concentration yards, and other buying points. The growth of motor-truck transportation in shipping livestock is indicated by table 7, which shows the percentage of "drive-ins" in the combined receipts of livestock at 17 markets (table 51). The term "drive-ins" is used by stockyard companies to mean animals received other than by rail.

More than 60 percent of the total receipts of hogs and calves at the 17 public markets in 1933 arrived in motor trucks, as compared with about 10 percent of the calves and 8 percent of the hogs received in 1924. Cattle arriving by motor truck represented nearly 46 percent of the total receipts in 1933 and less than 4 percent in 1924, while sheep and lamb deliveries by truck amounted to 25 percent and 6 percent of the total in the 2 years, respectively.

It appears that the development of livestock trucking would have adversely affected the shipping associations and would have led to the elimination of many of them even if an increasing proportion of the livestock had not been marketed direct. However, it is reasonable to suppose that the establishment of additional important livestock outlets in the producing area and the consequent reduction in the average distance which livestock is moved has tended to reduce the need for the services of the associations. Furthermore, the desire of farmers in the recent period of very low livestock prices to avoid marketing costs at public markets and the service charges of the association have contributed to some extent to the decline in the number of shipping associations and their volume of business.

TABLE 7.—*Livestock: Percentage of drive-ins in receipts at 17 markets ¹ 1916-33*

Year	Cattle	Calves	Hogs	Sheep and lambs	Year	Cattle	Calves	Hogs	Sheep and lambs
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>		<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
1916	1.38	4.10	1.79	1.28	1925	4.68	13.20	11.08	6.05
1917	1.56	6.43	2.97	1.64	1926	5.76	15.77	14.87	7.13
1918	1.72	7.33	4.21	1.71	1927	7.41	17.91	18.20	9.44
1919	1.91	8.33	5.73	2.20	1928	10.70	22.79	24.44	10.75
1920	2.22	9.49	6.95	3.43	1929	13.81	28.74	29.68	12.80
1921	2.46	8.84	7.80	4.14	1930	18.60	35.64	35.59	14.03
1922	2.88	9.44	8.55	6.20	1931	24.87	45.13	44.52	17.10
1923	2.94	10.24	8.39	6.09	1932	34.68	52.90	54.63	21.65
1924	3.36	10.43	8.83	5.91	1933	45.67	60.28	61.56	25.17

¹ Chicago, Cincinnati, Denver, East St. Louis, Fort Worth, Indianapolis, Kansas City, Louisville, Milwaukee, Oklahoma City, Omaha, Portland, St. Joseph, South St. Paul, Sioux City, Sioux Falls, and Wichita.

TRENDS AND SHIFTS IN WHOLESALE SLAUGHTER OF HOGS

Commercial hog slaughter has varied from year to year in response to changes in hog production, with an upward trend prevailing during most of the last 35 years. The peak years (calendar) were 1923 and 1924, when the total slaughter under Federal inspection numbered about 53,000,000 head. Although the trend in slaughter for the country as a whole has been upward for many years, the proportions slaughtered in the different geographical regions and by different groups of packers have changed considerably.

Since these changes and shifts in slaughter may have some relationship to direct marketing, an analysis was made of the regional distribution of hog slaughter and the trend of slaughter in each region over the period for which data were available. This analysis also included a special study of the changes in the commercial slaughter of hogs in the 12 Corn Belt States. The number of hogs slaughtered by packers located at public-stockyard markets in this area was compared with the number slaughtered by local or interior packers, and changes in the slaughter and in the proportions purchased direct and at public markets by the four large national packers were compared with changes in similar transactions of the other packers collectively. The analysis was based on the number of hogs slaughtered under Federal inspection during the years ended June 30, 1907-34.¹⁰

Slaughter of hogs in the North Atlantic States represented 20 percent of the United States total in 1907-08 and only 14.5 percent in 1933-34 (fig. 10 and table 53). The proportion which was slaughtered in the South Atlantic States increased throughout the period and in 1933-34 it was double that of 1907-08. Slaughter in this group of States, however, has always been very small in relation to the total for the entire country. Slaughter in the South Central States increased at about the same rate as the United States total but throughout the 27-year period it constituted only about 3 percent of that total. The proportion of this total which comprised the slaughter in the Inter-mountain and Pacific Coast States doubled between 1908 and 1933, but in the latter year it amounted to only 4.1 percent of the total for the country.

¹⁰ The time periods in the discussion on pp. 57-61 are in terms of years ended June 30 of the year designated, as slaughter statistics are so reported.

The relative increases in federally inspected slaughter of hogs in the South Atlantic and the far Western States, as compared with the total of such slaughter for the entire country, were offset largely by the reduction in the proportion slaughtered in the North Atlantic States. Throughout the last 27 years there has been little change in the proportion of the total which has been handled in the North Central States (Corn Belt). Federally inspected slaughter in this group of States throughout the period has ranged from 73.1 to 77.6 percent of the United States total, and during the last 12 years it ranged from 74.9 to 77.1 percent.

Although inspected hog slaughter in the 12 Corn Belt States as a whole has represented about 75 percent of the United States total

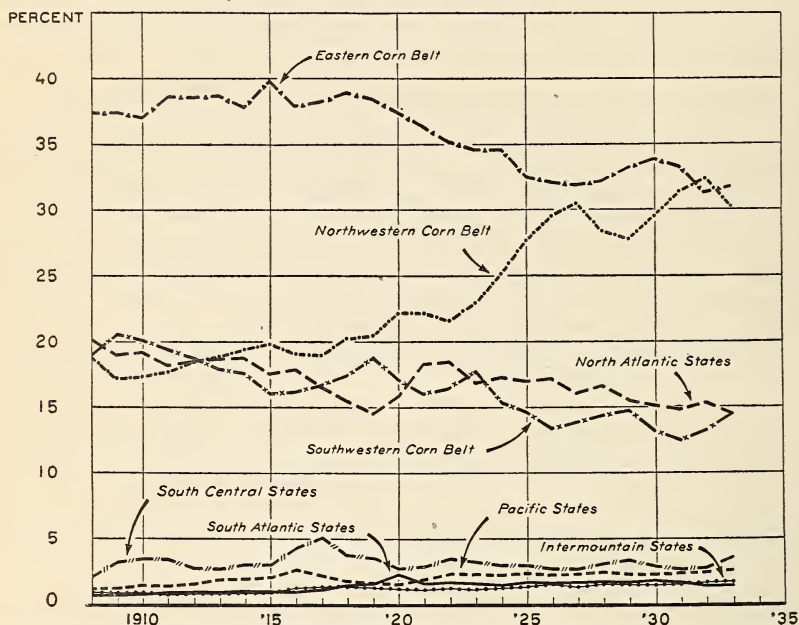


FIGURE 10.—HOGS SLAUGHTERED UNDER FEDERAL INSPECTION IN VARIOUS GEOGRAPHIC DIVISIONS, PERCENTAGE OF UNITED STATES TOTAL, 1908-33.

Important changes have occurred in the geographic distribution of hog slaughter since the World War. The proportion of hogs slaughtered in the five northwestern Corn Belt States has increased greatly, while that in other regions has decreased or continued relatively unchanged.

throughout the last 27 years, there have been very marked shifts in the distribution of this slaughter within that area. Slaughter in the 5 northwestern Corn Belt States has increased greatly, both actually and relatively, while the proportion of the United States total which is slaughtered in the 5 eastern Corn Belt States and in the 2 southwestern Corn Belt States has decreased. This shift in the geographical location of hog slaughter in the 12 Corn Belt States has coincided closely with shifts in hog and corn production which were discussed earlier.

EASTERN CORN BELT STATES

Slaughter in the 5 eastern Corn Belt States in all but 1 of the 27 years exceeded that of any other region, but since 1918 it has declined in proportion to the United States total. From 1909 to 1918 it

increased slightly in relation to the total, and in the latter year it amounted to 38.9 percent, but by 1932 it had declined to 31.2 percent. The decline was caused by a decrease in slaughter in Illinois and Indiana. Illinois ranks first among all the States in the slaughter of hogs because it includes the important slaughtering centers of Chicago and East St. Louis. Federally inspected slaughter in Illinois plants increased slightly from 1908 to 1919, and in the latter year it formed nearly 24 percent of the United States total. It then declined sharply to 1926, when it made up only 17 percent of the total.

The proportion has not changed appreciably since. Inspected slaughter in Indiana also has declined steadily throughout the period, whereas that in Ohio has increased.

SOUTHWESTERN CORN BELT STATES

The yearly slaughter of hogs in the two southwestern Corn Belt States has fluctuated widely throughout the 27-year period, but its trend, as compared with the total federally inspected slaughter was definitely downward from 1909 to 1931. In 1908-09, slaughter in this area constituted 20.5 percent of the United States total, but in 1930-31 it amounted to only 12.5 percent. The proportion of the total which comprised hogs slaughtered in Kansas decreased considerably during the period, but this downward trend was characterized by marked annual variations. The proportion of the total which was slaughtered in Missouri changed relatively little between 1908 and 1921, but has decreased rather regularly since.

NORTHWESTERN CORN BELT STATES

The increase in number of hogs slaughtered in the five northwestern Corn Belt States has been greater than that in any other region. Slaughter in these States made up about 18 percent of the United States total during the 5-year period 1907-08 to 1912-13, and increased to about 30 percent during the period 1929-30 to 1933-34. The most pronounced increase has occurred since 1923. Nebraska was the only State in this area which showed a decline in the proportion of hogs slaughtered between 1908 and 1933. The trend of slaughter in Iowa did not change appreciably from 1908 to 1923, but it has been sharply upward since. Slaughter in Minnesota increased from 3 percent to more than 10 percent of the total between 1908 to 1918, but has declined since 1926, and represented slightly less than 8 percent in 1932-33. Federally inspected slaughter in North Dakota and South Dakota combined, dates from 1910. The proportion of the United States total which was slaughtered in these two States increased gradually to 1925 and then increased sharply to 1933.

CHANGES IN HOG SLAUGHTER BY TYPES OF PACKERS

INTERIOR PLANTS AND PUBLIC-MARKET PLANTS

A study of the trends in the proportions of hogs slaughtered in packing plants located at the public markets and in those located elsewhere is pertinent to a study of direct marketing. For this particular analysis the public-market plants in the 13 cities ¹¹ in the 12 Corn Belt States where the 13 largest public-stockyard markets are established, regardless of whether the plants are adjacent to such yards or

¹¹ Chicago, Cincinnati, Cleveland, Detroit, East St. Louis, Indianapolis, Kansas City, Milwaukee, St. Joseph, Omaha, South St. Paul, Sioux City, and Wichita.

not, were classified in one group. All other plants in the 12 Corn Belt States were classed as interior plants. This classification does not coincide with any classification based on method of purchase, although most of the slaughtering plants which are located in these 13 public-market cities for many years obtained most of their hogs at such markets, and the interior plants obtained all or most of their hogs through direct purchase. There are a few slaughtering plants located at or near some public markets that for some years have obtained their hogs through direct purchase, and later in this report they are classified as a separate group. The classification of plants into two groups for the present comparison was made for the purpose of showing the extent to which hog slaughter in the 12 Corn Belt States is concentrated at the centers where the 13 largest markets are located and to indicate the changes that have taken place during recent years as compared with changes in the slaughter at the group of interior plants.

Reference has already been made to the fact that federally inspected slaughter of hogs in the 12 Corn Belt States represents about 75 percent of the United States total. The proportion of the slaughter in these 12 States which was handled by the interior plants did not change greatly from 1908 to 1919, fluctuating between 14.3 and 18.4 percent, and averaging 16.4 percent for the 12 years (table 54). In 1920, the proportion increased to 20.2 percent. Total slaughter in the 12 States in that year decreased 4,600,000 head from the previous year, but slaughter in the interior plants actually increased about 200,000 head. In 1924 interior slaughter comprised 23 percent of the Corn Belt total. In 1927 it amounted to 30.3 percent, and in 1932 it reached 35.3 percent. This growth of interior slaughter from an average of 16.4 percent of the Corn Belt total to 35.3 percent in a period of 13 years was accompanied by a reduction from 83.6 percent to 64.7 percent in the proportion slaughtered at the 13 principal market points. In actual numbers, federally inspected slaughter in the plants located at the 13 market points averaged 22,280,000 head during the 12 years 1908-19, and 23,691,000 head during the 5 years 1929-33, whereas slaughter in the interior plants during the two periods averaged 4,404,000 and 11,741,000 head, respectively. In other words, average yearly slaughter in the plants at the 13 public-market points in the latter period was only 6.3 percent (1,411,000 head) more than in the earlier period, whereas that at the interior plants was 166.6 percent (7,337,000 head) larger.

The increase in the proportion of hogs slaughtered by the interior packers occurred in each of the three Corn Belt areas. The number slaughtered in the interior plants in the 5 eastern Corn Belt States was relatively small from 1908 to 1919, averaging less than 1,000,000 head annually, but it has more than doubled since 1921. The proportion slaughtered also has more than doubled, increasing from about 6.5 to 14 percent. The increase in interior slaughter in Wisconsin was largely responsible for this change, although a slight increase has taken place in Ohio since 1924. Slaughter in interior plants in the 5 northwestern Corn Belt States was in smallest volume for the period in 1911 when it amounted to 1,586,000 head, but it has increased sharply during the last 25 years, amounting to 8,414,000 head in 1932; in North Dakota and South Dakota it has increased

very sharply since 1926. Slaughter in the interior plants in the 2 southwestern Corn Belt States has always been relatively small but it doubled between 1913 and 1924, and during the last 9 years it has averaged about 30 percent of the total in that area.

These comparisons show that the general trend in slaughter in the 12 Corn Belt States has been away from public-market centers to interior plants, especially since 1919. The shift has been especially pronounced since 1925, and the greatest gain has occurred in the five northwestern Corn Belt States. This marked increase since 1919 in the proportion of hogs slaughtered in the interior plants, accompanied by the decrease in the proportion slaughtered in the plants located in the 13 large public-market cities, is especially significant because the interior plants from the time they started operations have usually obtained most of their hog supplies through direct purchase and have seldom obtained any very large proportion on the public markets. It appears, therefore, that beginning about 1920, direct marketing of hogs began to increase in relation to marketing through public stockyards as a result of the increase in the proportion of hogs slaughtered by the interior packers. Later in this report consideration will be given to certain development which occurred after 1919 that had some bearing on this shift from marketing through public stockyards to marketing direct.

THE FOUR NATIONAL PACKING COMPANIES

The four large national packing companies have long been a very important factor in the meat-packing industry of the United States, and because of their relative importance the data pertaining to their slaughter of hogs were analyzed to ascertain if there had been any significant changes in the relation of their combined total slaughter to the United States total of federally inspected slaughter; also to what extent they had shifted from buying their hog supplies at public markets to buying direct. These four companies are Armour & Co., Swift & Co., Wilson & Co., and Cudahy Packing Co. The records of yearly hog slaughter in the plants operated by these companies in the 12 Corn Belt States were tabulated by calendar years for the period 1920-33.¹² In addition, tabulations were made on the basis of source or purchase (public-market and direct) of the hogs slaughtered in these plants during the years 1923-33.

The four national packing companies as a group have slaughter plants in each of the major geographical regions of the country, but during the 14 years 1920-33 an average of more than 86 percent of the total hogs killed in all of their plants were slaughtered in the plants located in the 12 Corn Belt States (table 8). From 1920 to 1931 the proportion ranged from 85.1 percent to 87.6 percent, but in 1932 and 1933 it averaged about 83 percent.

¹² The slaughter at the plants operated by Morris & Co. also were included as this company was generally recognized as one of the national packing companies until it was merged with Armour & Co. early in 1923.

TABLE 8.—*Hogs slaughtered by four national packing companies: Percentage distribution, by groups of States, 1923-33*

Calendar year	5 eastern Corn Belt States	2 southwestern Corn Belt States	5 northwestern Corn Belt States	12 Corn Belt States	36 other States	Calendar year	5 eastern Corn Belt States	2 southwestern Corn Belt States	5 northwestern Corn Belt States	12 Corn Belt States	36 other States
	Percent	Percent	Percent	Percent	Percent		Percent	Percent	Percent	Percent	Percent
1920-----	31.3	23.4	31.6	86.3	13.7	1927-----	27.8	19.6	39.4	86.3	13.2
1921-----	31.8	25.0	29.2	86.0	14.0	1928-----	27.2	23.0	35.8	86.0	14.0
1922-----	28.7	26.6	29.8	85.1	14.9	1929-----	27.9	22.2	37.3	87.4	12.6
1923-----	30.3	26.3	30.6	87.2	12.8	1930-----	28.2	19.3	40.1	87.6	12.4
1924-----	28.4	22.6	35.9	86.9	13.1	1931-----	26.2	18.5	42.3	87.0	13.0
1925-----	25.6	20.3	40.7	86.6	13.4	1932-----	23.8	21.9	37.3	83.0	17.0
1926-----	25.1	20.2	42.2	87.5	12.5	1933-----	27.2	21.7	34.0	82.9	17.1

When the hogs slaughtered by these four companies in the 12 Corn Belt States are grouped according to plant location (with respect to the 3 groups of States) it will be observed that the yearly variations are much greater for the individual groups than for the 12 States combined. These variations have resulted primarily from changes in hog production in the different areas. In general, however, the proportions slaughtered in the 5 eastern Corn Belt States and in the 2 southwestern Corn Belt States have declined during the 14 years, whereas that in the 5 northwestern Corn Belt States has increased. In 1921 nearly 32 percent of all the hogs slaughtered in the plants of these companies were slaughtered in the 5 eastern Corn Belt States. In 1932 less than 24 percent were slaughtered in this area. Slaughter in the plants located in the 2 southwestern Corn Belt States represented more than 26 percent of the total in 1922 and 1923, and less than 19 percent in 1931. Slaughter in the plants in the 5 northwestern Corn Belt States, on the other hand, amounted to less than 30 percent of the total in 1921 and 1922 and to more than 42 percent in 1926 and 1931. The proportion slaughtered in these States was reduced to 34 percent in 1933, the reduction being caused largely by a decrease in hog production in some of the States in the area.

RELATION OF HOG SLAUGHTER OF FOUR NATIONAL PACKING COMPANIES TO UNITED STATES TOTAL OF FEDERALLY INSPECTED SLAUGHTER

Since the slaughter in the plants of the four national packing companies in the Corn Belt States comprises such a large proportion of the total slaughter of these four companies (83 to 87 percent), it is of interest to find how this slaughter has compared with total federally inspected slaughter for the entire country, to ascertain if there have been any marked changes in the relationship. In 1920 the slaughter in these plants represented slightly more than 44 percent of all federally inspected slaughter of hogs, but in 1921 and 1922 it was less than 41 percent. There was an increase to 43.5 percent in 1923, but from 1924 to 1930 the ratio was about the same as in 1921 and 1922. In 1933 it reached 44 percent, or almost the same as in 1920. In other words, the Corn Belt plants of these four companies did not handle so large a proportion of the total federally inspected slaughter of hogs during the periods 1921-22 and 1924-32 as they did in 1920 and 1923, but in 1933 they regained most of what they had previously lost. Data on the hogs slaughtered by these four companies have not been compiled for the years prior to 1920, but the fact that all public-market plants, regardless of ownership, handled a larger proportion of the

Corn Belt slaughter in those years than they had since 1920, warrants the conclusion that the Corn Belt plants of these companies probably handled more than 44 percent of all hogs slaughtered under Federal inspection in the earlier period rather than less.

Prior to 1925, 1 of the 4 national packing companies operated 3 interior plants in the Corn Belt States, all located in the 5 northwestern Corn Belt States. All of the other Corn Belt plants of the four companies were located at or within a few miles of the public stockyard markets. Three of these plants, however, obtained most of their hog supplies through direct purchase. All the other plants located at public-market points obtained most of their hog supplies on these markets. Between 1925 and 1928, 5 interior plants, located in the 5 northwestern Corn Belt States, were purchased by 2 of the companies which previously had not operated interior plants. In 1932, 1 of the 3 interior plants of the first of the 4 companies to operate such plants discontinued operations.

To show the relative importance of the Corn Belt plants of the four national companies from the standpoint of their location with reference to the public stockyard markets and the shifts that have occurred in recent years which are of significance in a study of the growth of direct marketing, these plants were classified into three groups: (1) Public-market plants (those which were located at or very near public stockyards and which prior to 1928 obtained all or a large part of their hogs at such markets); (2) plants which were somewhat similarly located although usually more distant from the public stockyards and which for many years had generally obtained most of their hogs through direct purchase; and (3) interior plants. In 1923 the first group handled 86 percent of the total hogs slaughtered in the three groups combined (table 9). The proportion slaughtered by this group declined steadily to 71.8 percent in 1932, but it increased to nearly 77 percent in 1933.

The slaughter at the second group of plants (those located near public markets but generally getting hogs through direct purchase) averaged slightly less than 8 percent of the combined total at the three groups during the years 1923-25. Late in 1925 one of the companies acquired a plant within a few miles of the South St. Paul public stockyards which is included in this group. The hogs slaughtered by the group in 1926, therefore, increased to 9 percent of the total, and in 1929, it reached 12 percent. In subsequent years the proportion decreased, and in 1933 it amounted to less than 9 percent, or about the same as in 1926. In 1932 the Chicago plant included in this group was burned. Its yard facilities, however, were continued in operation for the purpose of receiving hogs purchased direct which are slaughtered in the owner's plants located at the public stockyards in Chicago.

Slaughter in the three interior plants represented slightly more than 6 percent of the total hogs killed in the Corn Belt plants of the four companies in 1923 and about 7 percent in 1924. Four additional interior plants were acquired in 1925 and another in 1928. The hogs slaughtered by the interior group, therefore, increased rapidly, amounting to 17.2 percent of the total for the three groups in 1931. It declined slightly in 1932 and 1933 because one of the interior plants discontinued operations and because hog production was reduced in the area where some of the interior plants obtain their supplies.

TABLE 9.—*Slaughter of hogs in Corn Belt plants of four national packing companies and in plants of other wholesale slaughterers in the Corn Belt, grouped according to plant location with reference to public stockyard markets,¹ 1923-33*

FOUR NATIONAL PACKING COMPANIES ²

Calendar year	Number of hogs slaughtered				Percentage slaughtered		
	In public-market plants	In plants near public markets	In interior plants	Total	In public-market plants	In plants near public markets	In interior plants
	<i>Thousands</i>	<i>Thousands</i>	<i>Thousands</i>	<i>Thousands</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
1923.....	20, 569	1, 836	1, 525	23, 930	86.0	7.7	6.3
1924.....	18, 764	1, 754	1, 533	22, 051	85.1	8.0	6.9
1925.....	15, 327	1, 379	1, 486	18, 192	84.2	7.6	8.2
1926.....	13, 248	1, 537	2, 261	17, 046	77.7	9.0	13.3
1927.....	14, 167	1, 791	2, 310	18, 268	77.6	9.8	12.6
1928.....	15, 629	2, 316	2, 570	20, 515	76.2	11.3	12.5
1929.....	15, 239	2, 439	2, 641	20, 319	75.0	12.0	13.0
1930.....	13, 309	1, 984	2, 545	17, 838	74.6	11.1	14.3
1931.....	13, 753	2, 064	3, 288	19, 105	72.0	10.8	17.2
1932.....	13, 297	2, 105	3, 111	18, 513	71.8	11.4	16.8
1933.....	15, 734	1, 822	2, 969	20, 525	76.7	8.9	14.4

OTHER WHOLESALE SLAUGHTERERS IN THE CORN BELT ³

Calendar year	Number of hogs slaughtered				Percentage slaughtered		
	In public-market plants	In plants near public markets	In interior plants	Total	In public-market plants	In plants near public markets	In interior plants
	<i>Thousands</i>	<i>Thousands</i>	<i>Thousands</i>	<i>Thousands</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
1923.....	10, 205	2, 037	4, 032	16, 274	62.7	12.5	24.8
1924.....	10, 417	2, 040	4, 610	17, 067	61.0	12.0	27.0
1925.....	8, 340	1, 857	4, 031	14, 228	58.6	13.1	28.3
1926.....	7, 393	1, 908	4, 126	13, 427	55.1	14.2	30.7
1927.....	8, 126	2, 017	4, 490	14, 633	55.5	13.8	30.7
1928.....	9, 226	2, 109	5, 150	16, 485	56.0	12.8	31.2
1929.....	8, 987	2, 003	4, 903	15, 893	56.5	12.6	30.9
1930.....	9, 012	2, 232	4, 707	15, 951	56.5	14.0	29.5
1931.....	8, 422	2, 120	4, 857	15, 399	54.7	13.8	31.5
1932.....	8, 618	1, 678	5, 115	15, 411	55.9	10.9	33.2
1933.....	8, 391	1, 693	5, 425	15, 509	54.1	10.9	35.0

¹ This grouping was based primarily on location with reference to the public markets and with respect to the method most commonly used in buying hogs. Plants classified as public-market plants are those in the public-market cities which usually have obtained most of their hogs at public stockyard markets. Those classified as near public markets are plants in, or very near, the public-market cities which for many years have obtained most of their hog supplies through direct purchase. Interior plants include all those not included in the first and second groups.

² About 35 plants each year.

³ About 100 plants each year, list not the same throughout the period.

It will be observed from the foregoing analysis that there has been a considerable shift in slaughter from the public-market plants of the four national packing companies to their interior plants. Slaughter at the latter group of plants increased actually and relatively from 1923 to 1931 and declined only slightly in 1932 and 1933. Slaughter at the plants which are located near the public markets and which have generally obtained most of their hogs through direct purchase also increased relatively from 1923 to 1929 but has since decreased. Slaughter in the plants at public markets, however, decreased actually and relatively from 1923 to 1932.

SHIFTS IN NUMBERS OF HOGS SLAUGHTERED BY THE SMALLER PACKERS

To determine the shifts and changes that have occurred in the number of hogs slaughtered at packing plants operated by concerns other than the four large national packing companies, the slaughter records of most of the plants in this group located in the 12 Corn Belt States (about 100 in number) were analyzed. These plants have been designated here as the "smaller packers." Practically all of the plants included in this group operate under Federal inspection, and during most of the 11 years 1923-33 their total slaughter was the equivalent of about 44 percent of the combined total of their slaughter and that of the Corn Belt plants of the four national companies. In 1923 the proportion was 40.5 percent, but from 1924 to 1929, inclusive, it ranged from 43.6 percent to 44.5 percent. In 1930 it increased to 47.2 percent, but in 1931 it declined to 44.6 percent, and in 1933 it was 43 percent. The smaller packers, therefore, gained somewhat on the national packing companies in 1924 and held this gain in the subsequent years. The additional gain made in 1930, however, was not maintained.

The plants of the smaller packers also were classified into three groups according to their location with respect to the public markets, the classification used being the same as that used with respect to the plants owned by the four national companies. During the period 1923-33 the plants of these smaller packers which are located at the public markets and which usually had obtained most of their hogs at such markets, slaughtered from 54 to nearly 63 percent of the total hogs killed by these packers, the trend in the proportion being downward from 1923 to 1926 (table 9).

Plants of the smaller packers that comprise the second group (those which are located near public markets but which usually have obtained their hogs through direct purchase) are located at Sioux Falls, S. D., and St. Louis, Mo. During most of the years 1923-31, the hogs slaughtered by this group represented 13 to 14 percent of the total slaughter of the smaller packers. In 1932 and 1933, it represented slightly less than 11 percent. The decrease in these 2 years was due to reduced hog production in the territory which supplies the Sioux Falls plant with hogs, and the fact that ownership of one of the plants in the group was acquired by one of the four national companies.

Slaughter at the interior plants of the smaller packers represented about 25 percent of the total number of hogs slaughtered by these packers in 1923, 27 percent in 1924, 31 percent in 1928, and 35 percent in 1933. The trend in the proportion of the interior plants, therefore, has been upward, increasing from about 25 percent to 35 percent in the 11-year period. Most of this increase was offset by the decrease in the proportion slaughtered in the plants located in the public-market cities. The trend in slaughter of the plants operated by the smaller packers, therefore, has been very similar to that of the four national packing companies. A marked shift in slaughter from public-market plants to slaughter in the interior plants has taken place in the last 10 years.

TRENDS AND CHANGES IN HOG-BUYING OPERATIONS

To ascertain the changes in the buying operations of the different types of packers, an analysis was made of the available statistical data showing the source of purchase of hogs slaughtered by most of the wholesale slaughtering plants located in the 12 Corn Belt States. These data pertain to the years 1923-33, and to the same plants included in the analysis of shifts in slaughter presented in the previous discussion. The plants were grouped according to ownership, that is, those owned by the four national companies and those owned by the smaller packers, and according to location with reference to the public markets in the Corn Belt. The groupings with respect to location were the same as those used in the discussion of shifts in slaughter—(1) public-market plants, (2) plants near the public markets, and (3) interior plants.

FOUR NATIONAL PACKERS

In 1923 and 1924 respectively the Corn Belt plants operated by the four national companies acquired 20.3 and 20.7 percent of their hog supplies through direct purchase and 79.7 and 79.3 percent through purchases at public stockyards (table 10). In 1925 direct purchases increased to 22.6 percent, and stockyard purchases declined to 77.4 percent. There were further increases in the proportion bought direct in almost every year up to 1933, when such purchases represented 50.8 percent of the total as compared with 49.2 percent bought at public stockyards. In other words, direct purchases from 1924 to 1933 increased from 20.7 percent to 50.8 percent of the total purchases, whereas purchases at stockyards fell from 79.3 percent to 49.2 percent. Figure 11 shows the trend in actual number of direct purchases of these companies as compared with purchases at public stockyards.

TABLE 10—Number and percentage of hogs purchased direct and at public-stockyard markets for Corn Belt plants of 4 national packing companies and of other wholesale packers, 1923-33.

[This tabulation is based on reports of the packing companies. The number of plants for which reports were available varied slightly from year to year but averaged 35 plants for the national-packer group and 100 plants for the other group. The slaughter of hogs in these 135 plants represented 90 percent or more of the wholesale slaughter of hogs in the 12 Corn Belt States]

Calendar year	4 national packing companies					Other packing companies				
	Purchased at public stockyards		Purchased direct		Total purchases	Purchased at public stockyards		Purchased direct		Total purchases
	Thousands	Percent	Thousands	Percent	Thousands	Thousands	Percent	Thousands	Percent	Thousands
1923-----	19, 073	79. 7	4, 856	20. 3	23, 929	9, 915	60. 9	6, 359	39. 1	16, 274
1924-----	17, 482	79. 3	4, 570	20. 7	22, 052	10, 063	59. 0	7, 004	41. 0	17, 067
1925-----	14, 075	77. 4	4, 118	22. 6	18, 193	8, 392	58. 9	5, 853	41. 1	14, 245
1926-----	12, 594	73. 9	4, 452	26. 1	17, 046	7, 551	56. 2	5, 876	43. 8	13, 427
1927-----	13, 074	71. 6	5, 195	28. 4	18, 269	8, 044	55. 0	6, 592	45. 0	14, 636
1928-----	13, 231	64. 5	7, 284	35. 5	20, 515	9, 363	56. 8	7, 122	43. 2	16, 485
1929-----	11, 270	55. 5	9, 049	44. 5	20, 319	8, 707	54. 8	7, 186	45. 2	15, 893
1930-----	10, 053	56. 4	7, 785	43. 6	17, 838	8, 931	56. 0	7, 020	44. 0	15, 951
1931-----	10, 046	52. 6	9, 059	47. 4	19, 105	8, 136	52. 8	7, 263	47. 2	15, 399
1932-----	9, 231	49. 9	9, 283	50. 1	18, 514	7, 744	50. 2	7, 668	49. 8	15, 412
1933-----	10, 098	49. 2	10, 431	50. 8	20, 529	7, 563	48. 8	7, 945	51. 2	15, 509

If the purchases are analyzed according to the location of the plants, the interior plants operated by the four national companies will be seen to have acquired practically all of their hogs through direct

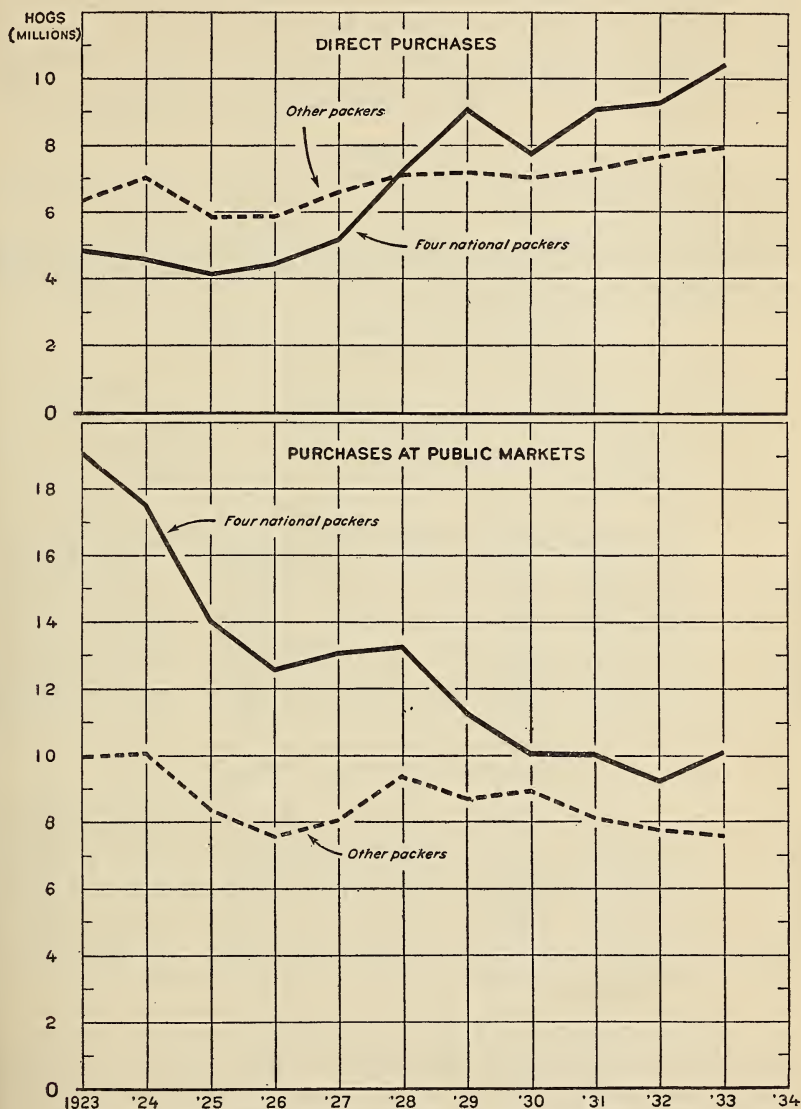


FIGURE 11.—HOGS PURCHASED FOR CORN BELT PACKING PLANTS, 1923-33.

Both large- and small-scale packers have materially increased their direct purchases of hogs since 1926. The direct purchases of the four national packing companies, however, increased relatively more than those of all other Corn Belt packers as a group. Purchases of hogs at public-stockyard markets by the national companies during this period were greatly reduced, whereas those of the other packers as a group declined only slightly.

purchase during the entire period, the percentage by years ranging from 99.1 percent to 100 percent (table 11). The plants which were located near public markets and which generally obtained their hogs

direct acquired 93.6 percent of their hogs by direct purchase in 1923, and in all but 2 of the subsequent years they acquired from 98.5 percent to 100 percent in this manner. The plants in public-market cities which prior to 1928 obtained most of their hogs at public stockyards acquired less than 8 percent of their hogs by direct purchase during the period 1923-27. In 1928 their direct purchases increased to 15.7 percent, and in 1929 they mounted to 26.2 percent. In 1932 the proportion was 30.6 percent, and in 1933 it was 35.8 percent.

TABLE 11.—*Hogs bought direct and at public stockyards for Corn Belt plants of four national packing companies and of the other packers, grouped according to plant location, 1923-33*

[This tabulation is based on reports of the packing companies. The number of plants for which reports were available varied slightly from year to year but averaged 35 plants for the national-packer group and 100 plants for the other group. The slaughter of hogs in these 135 plants represented 90 percent or more of the wholesale slaughter of hogs in the 12 Corn Belt States. See table 9 for explanation of classification of packing plants according to location]

FOUR NATIONAL PACKING COMPANIES

Calendar year	Plants at public-stockyards markets				Plants near public-stock-yards markets				Interior plants			
	Bought at public stock-yards		Bought direct		Bought at public stock-yards		Bought direct		Bought at public stock-yards		Bought direct	
	Thou-sands	Per-cent	Thou-sands	Per-cent	Thou-sands	Per-cent	Thou-sands	Per-cent	Thou-sands	Per-cent	Thou-sands	Per-cent
1923	18,954	92.2	1,615	7.8	117	6.4	1,719	93.6	3	0.2	1,522	99.8
1924	17,453	93.0	1,311	7.0	19	1.1	1,735	98.9	9	0.6	1,524	99.4
1925	14,065	91.8	1,263	8.2	6	0.4	1,374	99.6	5	0.3	1,482	99.7
1926	12,507	94.4	741	5.6	86	5.6	1,451	94.4	1	0.1	2,259	99.9
1927	13,057	92.2	1,110	7.8	14	0.8	1,777	99.2	3	0.1	2,308	99.9
1928	13,174	84.3	2,455	15.7	34	1.5	2,281	98.5	23	0.9	2,547	99.1
1929	11,254	73.8	3,985	26.2	1	0	2,438	100.0	14	0.5	2,627	99.5
1930	10,034	75.4	3,275	24.6	2	0.1	1,983	99.9	17	0.7	2,528	99.3
1931	9,947	72.3	3,806	27.7	99	4.8	1,966	95.2	0	0	3,288	100.0
1932	9,225	69.4	4,073	30.6	6	0.3	2,099	99.7	0	0	3,111	100.0
1933	10,098	64.2	5,639	35.8	0	0	1,822	100.0	0	0	2,969	100.0

OTHER WHOLESALE SLAUGHTERERS

1923	8,537	83.7	1,668	16.3	903	44.3	1,134	55.7	475	11.8	3,557	88.2
1924	8,638	82.9	1,778	17.1	766	37.6	1,274	62.4	659	14.3	3,952	85.7
1925	7,094	85.1	1,245	14.9	772	41.2	1,103	58.8	526	13.0	3,505	87.0
1926	6,407	86.7	986	13.3	761	39.9	1,148	60.1	383	9.3	3,742	90.7
1927	6,943	85.4	1,187	14.6	757	37.5	1,260	62.5	344	7.7	4,146	92.3
1928	7,829	84.8	1,397	15.2	915	43.4	1,194	56.6	620	12.0	4,530	88.0
1929	7,366	82.0	1,621	18.0	853	42.6	1,149	57.4	488	10.0	4,415	90.0
1930	7,446	82.6	1,566	17.4	948	42.5	1,284	57.5	537	11.4	4,170	88.6
1931	6,898	81.9	1,525	18.1	736	34.7	1,383	65.3	502	10.3	4,355	89.7
1932	6,900	80.1	1,719	19.9	472	28.1	1,206	71.9	372	7.3	4,744	92.7
1933	6,670	79.5	1,720	20.5	445	26.3	1,248	73.7	448	8.3	4,977	91.7

It will be observed that the four national companies began to expand their direct-buying operations in 1925, largely through the acquisition of four interior plants and a plant located near one of the public markets—all of which obtained their hog supplies through direct purchase. During 1926 and 1927, these companies expanded their direct-buying operations through the operation of their interior plants, but there was no significant increase in direct purchases for their public-market plants until 1928. Direct purchases for the public-market plants in that year were more than double those in 1927. In 1929 direct purchases for these plants were 60 percent larger than in

1928. They decreased in 1930, but the reduction in that year was made up in 1931. Further increases occurred in 1932 and 1933, and in the latter year the total direct purchases for the public-market plants were more than 4 times as large as in 1924 and nearly 8 times as large as in 1926. Direct purchases for the interior plants in 1933 were about twice as large as in each of the 3 years 1923-25. Direct purchases for plants located near the public market were only slightly greater in 1933 than in 1923 and in 1924.

SMALL PACKERS

In 1923 the wholesale packers in the Corn Belt, other than the four national companies, obtained 39 percent of their hog supply through direct purchase and about 61 percent at public stockyards (table 10). The proportion acquired through direct purchase increased to 45 percent in 1927, dropped to 43 percent in 1928, and then rose to 47 percent in 1931 and to 51 percent in 1933. The proportion obtained at public stockyards declined from 61 percent in 1923 to about 49 percent in 1933. The trends in actual number of direct purchases and of purchases at public stockyards are shown in figure 11. It will be observed that while the direct purchases of the national companies rose from 20.3 percent of their total purchases in 1923 to nearly 51 percent in 1933, the direct purchases of the other packers rose from 39 to 51 percent of their yearly totals. The rate of increase in direct buying, therefore, was somewhat greater with respect to the national companies than it was with the other packers.

The interior plants of the small Corn Belt packers acquired 88 percent of their hog supply by direct purchase in 1923 (table 11). In subsequent years, the proportion thus purchased ranged from 85.7 to 92.7 percent, the latter figure being the proportion in 1932. Purchases at public stockyards for this group of plants during the 11-year period ranged from 7.3 to 14.3 percent of their yearly totals, but there was no definite upward or downward trend in the proportion of such purchases. However, about 35 percent more hogs were slaughtered in these plants in 1933 than in 1923.

The plants of the small packers which were located near the public stockyard markets and which usually have obtained most of their hogs direct, acquired 55.7 percent of their hogs through direct purchase in 1923, and 62.4 percent in 1924. From the latter year to 1931 the proportions ranged from 56.6 to 65.3 percent. In 1932 it increased to 71.9 percent, and in 1933 to 73.7 percent. The total purchases of these plants changed relatively little during the period 1923-31, but there were decreases in 1932 and 1933 because of the sale of one of the plants to one of the national companies in 1931 and because of a reduction in hog production in the area supplying one of these plants with hogs.

The plants operated by the small packers at the public markets acquired 16.3 percent of their hog supply by direct purchase in 1923, and 17.1 percent in 1924. During the next 4 years the proportion ranged from 13.3 to 15.2 percent. It increased to 18 percent in 1929 and to 20.5 percent in 1933. There was not much change in the total number of hogs handled by this group of plants after 1924.

COMPARISON OF DIRECT PURCHASES AND PUBLIC-MARKET PURCHASES OF HOGS BY THE NATIONAL PACKING COMPANIES AND THE OTHER PACKERS

In 1923 the Corn Belt plants of the four national companies handled approximately 43 percent of the hogs that were purchased direct by all wholesale plants located in the Corn Belt, the other 57 percent being acquired by the other wholesale packers operating plants in that region (table 12). In the same year these plants of the national companies acquired about 66 percent and the other packers 34 percent of the hogs bought on public stockyard markets by all Corn Belt plants. By 1933 the positions of the two groups of packers with respect to the proportions of direct purchases handled by each were reversed from what they were in 1923—the national companies handling 57 percent and the other packers 43 percent of the total. There was also a tendency towards a reversal of their positions with respect to the proportions purchased at public stockyards. The proportion of the national companies declined from nearly 66 percent in 1923 to 53 percent in 1930, whereas the proportion of the other packers rose from 34 percent to 47 percent. In 1933, however, the proportions were 57 percent for the national companies and 43 percent for the other packers.

TABLE 12.—*Percentage distribution by types of packers of total hogs bought direct and at public stockyards for Corn Belt packing plants*

Calendar year	Hogs bought direct by—		Hogs bought at public stockyards by—		Calendar year	Hogs bought direct by—		Hogs bought at public stockyards by—	
	Four national packers	Other packers	Four national packers	Other packers		Four national packers	Other packers	Four national packers	Other packers
	Percent	Percent	Percent	Percent		Percent	Percent	Percent	Percent
1923.....	43.3	56.7	65.8	34.2	1929.....	55.7	44.3	56.4	43.6
1924.....	39.5	60.5	63.5	36.5	1930.....	52.6	47.4	53.0	47.0
1925.....	41.3	58.7	62.6	37.4	1931.....	55.5	44.5	55.2	44.8
1926.....	43.1	56.9	62.5	37.5	1932.....	54.8	45.2	54.4	45.6
1927.....	44.1	55.9	61.9	38.1	1933.....	56.8	43.2	57.2	42.8
1928.....	50.6	49.4	58.6	41.4					

DEVELOPMENTS CONTRIBUTING TO THE RECENT GROWTH OF DIRECT MARKETING

Prior to the Civil War direct marketing apparently was used more extensively than any other method in selling livestock. During the period between the Civil War and the World War it was displaced to a large extent by the method of selling livestock through public-stockyard markets in which the services of commission agencies were used in making sales to the packer buyers. The establishment of these public markets resulted largely from the concentration of wholesale packing plants in certain cities because of transportation advantages arising from the development of railroads.

Marketing livestock through public stockyards apparently reached its peak just before or during the World War. Statistics as to the proportion of direct purchases in total federally inspected slaughter of hogs during the period 1908–22 are not available, but there is evidence to indicate that prior to 1919 the proportion ranged from

15 to 20 percent and was probably nearer 20 percent than 15. This conclusion is based on the ratio of slaughter at interior plants to total slaughter, since these plants have always obtained most of their hog supplies through direct purchase. Some increase in direct marketing apparently occurred in 1915 and 1916 but the gain in those years was lost during the war years of 1917 and 1918. In 1920, direct marketing again began to increase, as indicated by the increased proportion of hogs slaughtered in the interior plants. The growth was fairly slow during the years 1920-25, but during the period 1926-32 it was very rapid, and in the latter year the proportion of direct purchases in total federally inspected slaughter was at least double that in 1920 when direct marketing began to expand.

This marked shift since the war, from marketing through public stockyards to marketing direct, apparently resulted from a number of developments which occurred during this period, the outstanding causal factor being the strong competition to obtain hogs for slaughter that developed between the four national packing companies and the other packers, particularly those operating interior plants located in the five northwestern Corn Belt States where hog production was expanded rapidly.

The increased competition that started immediately after the World War may have resulted in part from certain conditions that developed during the war period. During the war years a large part of the output of the national packing companies was devoted to supplying meat products for the use of the Allied forces abroad, and a much larger than usual proportion of the domestic business went to the other packers.

The increased price of hogs and the higher operating costs during the war years, together with the greatly increased volume of business handled in the export trade, required the use of immense sums of working capital, which to a large extent were borrowed. Immediately after the war ended in November 1918 there was much uncertainty for a short period as to what adjustments would be made in the price level of hogs and hog products. The new winter-marketing season was at hand, current stocks of products were large, and prices were at very high levels as compared with prices in pre-war years. It soon developed, however, that much of the available and prospective supplies of products probably could be utilized abroad, and from early March to late July 1919 a highly speculative situation developed with prices advancing sharply. By the end of July, hog prices at Chicago had advanced above \$23 per 100 pounds, and record stocks of products had been accumulated. This speculative condition was followed by a very rapid decline in prices of hogs and hog products during the remainder of 1919, and by December of that year hog prices were below \$14 per 100 pounds. Those packers who had large inventories were forced to take heavy losses in the disposal of their products. They included the five national companies, as they held very large stocks both in this country and abroad. Following the general decline in commodity prices in 1920 and 1921, three of the national companies apparently found it necessary to make financial readjustments. Two of the companies did this by effecting a consolidation in 1923. The other company went into receivership in 1924.

The smaller packers apparently were not confronted with such difficulties as were faced by the national companies. They had developed domestic outlets which they could maintain and were even able to expand. They were aided by a very unusual increase in hog production which resulted from the large production of corn from 1919 to 1923 and the low prices of corn from 1921 to 1923. The increase in hog production in those years was especially large in the territory from which the larger interior packers obtained their supplies. Consequently these packers were in position to expand their business very easily. In 1925 and 1926 hog supplies were greatly reduced as compared with those in the 2 previous years, but the reduction was less marked in the area from which the interior packers obtained supplies than it was in other parts of the Corn Belt.

The interior packers, therefore, were in a better position than were the packers at the public markets to maintain the volume of slaughter they had acquired in 1923 and 1924; and, although total slaughter decreased sharply, that of the interior packers in the five northwestern Corn Belt States did not decline. This created, for the public-market packers located at some market points, a serious business problem, arising not only from a large loss in actual volume of operations but also from a loss in their relative position in the packing industry.

The public-market packers had apparently three possibilities of increasing their actual and maintaining their relative volume of operation. One way was to bid up the price of hogs at some public markets, particularly at Chicago, in an effort to attract a relatively larger volume to these points. As a practical business matter, this way had important limitations. To have followed it would have meant bidding up the price of hogs arriving at these markets from areas other than those where interior packer competition was important. But this would not have improved the competitive position of the public-market packers unless they could have operated on margins that were smaller than those of the interior packers or could sell their product at higher prices than those obtained by the latter group. Had the packers attempted to attract a larger volume of hogs to some public-market points, Chicago for example, it is not at all certain that they would have been able to accomplish this aim since the competitive advantages under which interior packers operate probably would still have enabled them to maintain or even to increase their operations.

The second possibility open to the public-market packer was that of acquiring or building interior plants in the northwestern Corn Belt and expanding operations at plants already owned in that area, and thus meet the interior packer on his own ground. This was done to a considerable extent, but it could not entirely meet the problem since there were still the plants at public-market points to be operated. So long as they were operated at all, they had to be operated at a fairly economical capacity, and they were too valuable to abandon and replace with corresponding capacity at interior points. Hence, the third possibility was to buy hogs direct, in the territory of the interior packers, for shipment to the public-market plants, and this course was followed extensively, as is shown in the statistical evidence presented earlier in this report.

Not only were the interior packers in the five northwestern Corn Belt States favored by the marked expansion in hog production in this area after the World War, which made relatively large supplies of hogs available to them for slaughter, but they also were favored by a freight-rate structure on hogs and hog products which was advantageous in meeting the competition of packers located elsewhere. In addition, they had the advantage of lower wage costs than packers located in some of the large public-market cities. These wage-cost and freight-rate advantages are discussed more fully later in this report.

Although the strong competitive situation which developed from 1920 to 1933 between the national companies and the independent interior packers, in which each group endeavored to maintain and increase its proportion of the business available, undoubtedly was one of the principal factors which caused the shift from marketing through public stockyards to marketing direct, other developments aided in bringing about this change. These included the building of hard-surfaced highways and the increased use of the motor trucks for transporting hogs, which resulted in increasing the number of large-scale market outlets available to many hog producers. The improvement in the collection and dissemination of market information made it possible for the producer to make better use of these increased outlets, since it placed him on more equal terms with buyers at these points.

CHAPTER 3

RELATION OF TRANSPORTATION TO DIRECT MARKETING

Transportation conditions and methods have been important factors in the growth of the direct marketing of hogs. Transportation factors of major importance are the extension of railroad transit privileges the development of motor-truck transportation, and the relationships of freight rates on hogs and hog products. Railroad transit privileges are of special significance in livestock marketing generally, but they have been much more widely used in the direct marketing of hogs than in the movement of hogs to public markets. Motor-truck transportation, on the other hand, has become equally important in all market movements of livestock, whether direct or to public markets. Freight-rate relationships determine the relative advantage or disadvantage of shipping hogs as compared with shipping hog products. These relationships have a bearing on the growth of direct marketing chiefly through their effect on the relative situation of packers in different regions.

TRANSIT PRIVILEGES AS RELATED TO DIRECT MARKETING

Railroads have provided certain special services, methods, and rate schedules for transportation of livestock. Important among these services are transit privileges which are provided generally for commodities that move in fairly large volume. Usually such privileges are furnished by railroads at some intermediate point on the basis of the through rate from origin to destination. They provide an arrangement whereby shipments may be stopped en route to undergo some change in make-up. Transit privileges are local insofar as each railroad is concerned, hence they tend to vary in character and in number.

A number of different transit arrangements are provided in connection with the movement of livestock. One of the common provisions is to allow livestock to be stopped at an intermediate point for a period not to exceed 1 year for feeding and fattening, and then to allow such stock to be reshipped for an additional charge which is less than the local rate to the point of destination. A nominal charge is ordinarily assessed for this transit service. The identity of the shipment need not be maintained, and a change of ownership does not invalidate the transit privilege.

Another type of transit privilege permits livestock to be stopped at a specified point for a relatively short period, usually 10 days, for feed and water, and sometimes for sale. No change in the make-up of the shipment is permitted. Livestock may also be stopped at certain points to test the market, and if not sold may be forwarded at the through rate. In order to be accorded this privilege at public markets in the Middle West, livestock must be reshipped within 48

hours after arrival, and no change in ownership or in the make-up of shipment itself is permitted. At certain western markets, however, changes in ownership and in identity of the shipment are allowed.

In addition to the transit privileges outlined above, other arrangements are provided at some points for concentrating livestock and permitting changes in the identity and ownership of shipments with the through rate protected. Such concentration privileges are commonly allowed in the movements of hogs, but their application is limited for other kinds of livestock. Usually at the points where concentration privileges are permitted, yards and yard facilities are provided. Because of the advantage of these concentration arrangements they have become an important factor in the marketing of hogs, especially when hogs are sold direct.

Concentration privileges have been granted most extensively in the area west of the Mississippi River, and nearly all of the concentration yards are located in that area. Such yards are most numerous in the western Corn Belt States, although they are found also in Montana, Colorado, Oklahoma, and Texas, and other Western States. In the eastern Corn Belt there are a large number of assembly points, sometimes called concentration yards but differing from the western yards in that fewer privileges are allowed by the railroads. A stop-over charge usually is assessed at these assembly points.

Concentration yards may be established in several ways. In many instances railroads build the yards and lease them to packers, cooperative shipping associations, or individuals, but in other instances yards are built wholly or partly by yard operators. The railroads allow certain transit privileges which are open to all shippers, but such yards and facilities as are owned or controlled by private operators are usually not public in character as are railroad services.

The concentration privileges allowed by carriers are governed by definite regulations. A number of these are uniform as between carriers. A period of 10 days after arrival of the shipment at the concentration yard is allowed for reshipment. A charge of \$2 per car is made for the transit service, and special services such as unloading, loading, switching, feeding, and bedding are at the expense of the shipper. The concentration point at which the privilege is granted must be intermediate between the origin and final destination.

The general rate provision for shipments that are to be accorded privileges at a concentration yard is that the through rate from the point of origin to final destination is to be maintained. The advantage of such an arrangement for a given haul is that the through rate is usually lower than a freight charge based on a combination of two or more local rates. This may be illustrated by considering the movement of a single-deck shipment of hogs originating at Granville, Iowa, destined for Chicago, and stopped at Cedar Rapids, Iowa, for concentration or change in make-up. The hogs move from Granville to Cedar Rapids at the local rate in effect, namely 34.5 cents per 100 pounds. At Cedar Rapids, sale of the hogs may take place. Part or all of the hogs in the shipment may be replaced by other hogs, and the carload may then be moved from Cedar Rapids to Chicago on the basis of the through rate from Granville to Chicago. This through rate is 47 cents per 100 pounds. Hence the rate on the shipment from Cedar Rapids to Chicago would be 12.5 cents per 100 pounds, the difference between the local rate from Granville to Cedar Rapids

and the through rate from Granville to Chicago. If transit or concentration privileges had not been permitted, the shipper in stopping at Cedar Rapids would have been required to pay a local rate on both the inbound and outbound movements. The combination of the two local rates totals 66.5 cents per 100 pounds as compared with the through rate of 47 cents. The combination of local rates, therefore, would be higher by 19.5 cents per 100 pounds, or about \$32 per single-deck car, than the effective through rate.

From the standpoint of direct marketing the features of concentration privileges which provide for a change in ownership and in the identity of the shipment with the maintenance of the through rate are most important. Concentration yards have been used largely by packers, whose plants are located outside the immediate area where the hogs are purchased or concentrated, and by other buyers who ship to points outside the area. Thus hogs may be stopped at a concentration yard and sold, and then be sorted and forwarded to packing plants according to weights and grades desired. Hogs that arrive at the yards by motor truck may also be used to complete outbound loadings. More economical loadings on outbound movements from concentration yards also are made possible, because carloads below the minimum weight can be increased to the minimum weight without charge for the added weight. Other arrangements permit inbound single-deck shipments to be loaded into double-deck cars. This feature allows shippers to take advantage of lower double-deck rates wholly or partly according to rules that differ among railroads.

Facilities provided by concentration yards are much better adapted to direct buying of hogs than to the shipment of hogs to public markets for sale. When privileges offered by these yards are used for buying hogs for consignment to public markets, services performed at the concentration yard, such as assembling and sorting, duplicate, at least in part, services rendered at the public market. Packers or other buyers who buy hogs in large numbers are able to make full use of concentration privileges since they buy hogs over large areas and the privileges provide a flexible means of buying hogs with relatively low transportation charges. On the other hand, buyers who purchase hogs in small numbers usually have little occasion to use concentration arrangements because ordinarily they do not buy hogs at any considerable distance from their local loading points.

The rapid growth in the number of concentration yards in recent years was mentioned earlier in this report. In 1920 there were only 19 concentration yards in the western Corn Belt; by 1927 the number had increased to 54; and in 1933 the number of such yards in that area totaled 195. The development of concentration facilities and the growth of direct marketing have been closely interrelated. Prior to about 1925 most of the hogs purchased direct were bought by packers located in the interior and by packers whose plants were located at public-market points but away from the public market. As packers located at public markets began to buy hogs direct in large numbers, facilities for buying were necessary in the area where hogs were produced, in order to take advantage of the large movement of hogs by truck. Concentration privileges provided by the railroads were of much value in such operations and have been widely adopted.

Although direct marketing is dependent only in part on concentration privileges, it has been facilitated and extended by this transit arrangement. By this means hogs of different kinds, from many sources, in small and large lots, can be assembled and sorted at the yards through the facilities and privileges provided. In this sense, the concentration yard and its services are similar in some respects to the marketing services which are performed either locally or at public markets.

MOTOR-TRUCK TRANSPORTATION AND DIRECT MARKETING

The motor truck has assumed a position of increasing importance in the movement of livestock, especially since the World War. Its capacity, speed, and flexibility of movement, along with other features, make it well adapted to the transportation of livestock over considerable distances. The steady increase in the number of livestock trucked to public markets and the large proportion of receipts at all markets arriving by trucks indicate that growth and significance of the motor truck in livestock transportation. An indication of the development of the motor truck for general transportation purposes is given in table 55, which shows the annual registration figures for motor trucks from 1920 to 1933. Truck registrations in the United States increased steadily from 10,000 in 1910 to slightly more than 1,000,000 in 1920 and to nearly 3,500,000 in 1930. Registrations of motor trucks in the Corn Belt area followed the same general trend as in the United States as a whole.

The improvement of highways has been an important factor in the growth of motor-truck transportation. This improvement has been effected mostly by changes in existing roads rather than in increase in total mileage. During the last dozen years marked advances have been made in the surfacing and the widening of roads, in the strengthening of bridges, and in the rearrangement and completion of routing. A comparison of present highway maps with those of previous years shows the increase in surfaced roads, the completion of connecting highways, and the elimination of much round-about routing.

In considering the relation of truck transportation to the growth of direct marketing it should be recognized that the use of trucks is not peculiar to the direct marketing of hogs but that they are also used widely in transporting hogs to public markets. However, certain features or services of truck transportation make it readily applicable to direct marketing; and these features no doubt have been contributing factors of some importance to the growth of direct marketing.

One of the chief ways in which the development of truck transportation has contributed to the growth of direct marketing has been in making interior packing plants and concentration yards more readily available to a large number of hog producers. Since trucks are most economical for short hauls, their increased use has encouraged shipments of hogs to concentration yards and packing plants, many of which are located closer to producers than are public markets. During recent years more than 50 percent of the hogs received at interior packing plants and concentration yards have been truck shipments.

In the case of hogs marketed direct, the charges for handling small lots is less than when similar lots are handled at public markets. Since the movement of hogs by truck is usually in small lots, this

smaller charge tends to encourage the truck movement through direct channels. Then, too, in many instances marketing direct by truck is the most convenient method to producers and requires less of their time than other methods.

It will be observed from the foregoing discussion that in direct marketing trucks have a greater advantage when the movement of hogs is directly from producer to packer since the haul in this case may be made entirely by truck, with no assembling or concentrating at any intermediate point. Trucks have provided a more rapid and direct method of transportation to both interior packing plants and concentration yards, however, than using local market agencies.

RELATIONSHIPS BETWEEN FREIGHT RATES ON HOGS AND ON HOG PRODUCTS

The relationships between railroad freight rates on hogs and on pork and lard are of special importance in hog marketing, since they define the rate advantages or disadvantages which particular packing plants have because of location with respect to the available supply of hogs and the market outlet for hog products. The varying nature of freight rates indicates that in some instances it is cheaper to ship hogs in dressed form, which is favorable to packing plants near the hog supply; and that in other instances hogs can be shipped more cheaply than hog products, in which case plants located near the consuming market are favored. It appears that, in general, packers located between the important hog-supply areas and consuming markets for surplus hog products have certain freight-rate disadvantages because of their location. During recent years the location of slaughtering plants has been related to the direct marketing of hogs in that packers whose plants are located near the source of hog supplies have bought most of their hogs direct.

Freight-rate relationships have affected direct marketing chiefly in two ways. (1) Relative rates on hogs and hog products in certain areas tend to determine whether it is more advantageous to ship hogs or hog products. This is important since different relationships between rates on hogs and hog products prevail in different sections of the country. (2) The difference in rates per ton-mile on hogs and hog products among areas is involved, resulting from the fact that freight rates in general do not increase proportionally with distance.

FREIGHT RATES ON HOGS AND HOG PRODUCTS

As is stated elsewhere in this report, the general movement of hogs and hog products in the United States is eastward. Most areas in the Corn Belt produce hogs considerably in excess of consumptive requirements for hog products in such areas. This surplus of hogs and hog products is shipped largely eastward, where hogs are produced only in small numbers and the population is relatively large. In general, prices of hogs and hog products in the eastern region (Atlantic seaboard and adjacent territory) are higher than in the Corn Belt chiefly because of freight rates and other transportation charges. Packing plants that process hog products for consumption in the eastern regions are located at numerous points from the western part of the Corn Belt eastward, and shipments from the Corn Belt are made in the form of both hogs and hog products. Hence the effect of freight rates on the competitive situation in the hog-packing industry is complicated.

In general, on all shipments originating at points in the Corn Belt States and moving eastward, freight rates per 100 pounds on hogs are higher than the freight charge on hog products obtained from 100 pounds of hog. This is especially true for points located between the Missouri and Mississippi Rivers. Higher rates for hogs than for the hog-product equivalent have been in effect for more than 20 years, and this relationship no doubt has contributed to some extent to the growth of the packing industry in the western Corn Belt, and in this manner has been a factor in the increase in the direct marketing of hogs.

Railroad freight rates on hogs, fresh pork, cured pork, and lard, from selected points in the Corn Belt to eastern and western destinations as of June 30, 1934, are shown in table 13. Freight rates differ materially as between the different rate territories. Thus it will be observed that from Chicago, Cleveland, and Mississippi River points to New York (official territory) the rates per 100 pounds on fresh pork are about 50 percent greater than the rates per 100 pounds on hogs, and the rates for similar movements on cured pork and lard are about the same as the rates on hogs. On the other hand, from Des Moines and Omaha to Mississippi River points and Chicago (western trunk line territory) the rates per 100 pounds on fresh pork and on cured pork and lard are the same, but they are somewhat lower than the rates per 100 pounds on hogs. The freight charge on the products obtained from 100 pounds of hog (25 pounds of fresh pork and 45 pounds of cured pork and lard) from Des Moines to Chicago is only about one-half the charge per 100 pounds on live hogs between these points.

TABLE 13.—*Railroad freight charges on hogs and hog products for selected movements, June 30, 1934*

Origin	Destination	Rate per 100 pounds on—			Charge on 70 pounds of hog products ¹	
		Hogs, double-deck	Fresh pork	Cured pork and lard	25 pounds fresh pork and 45 pounds cured pork and lard	55 pounds fresh pork and 15 pounds lard
		<i>Cents</i>	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>
Cleveland.....	New York.....	37.5	56.0	41.0	32.4	37.0
Chicago.....	do.....	53.0	79.0	53.0	43.6	51.4
Mississippi River.....	do.....	57.0	87.0	58.0	47.9	56.6
Des Moines.....	do.....	77.0	98.0	69.0	55.6	64.2
Omaha.....	do.....	85.0	115.0	85.0	67.0	76.0
Chicago.....	Cleveland.....	31.0	44.0	32.0	25.4	29.0
Mississippi River.....	do.....	40.0	53.5	38.0	30.5	35.1
Des Moines.....	do.....	59.0	64.5	49.0	38.2	42.8
Omaha.....	do.....	66.0	80.0	65.0	49.2	52.8
Des Moines.....	Chicago.....	34.0	25.0	25.0	17.5	17.5
Omaha.....	do.....	40.0	36.0	36.0	25.2	25.2
Des Moines.....	Mississippi River.....	20.0	11.0	11.0	7.7	7.7
Omaha.....	do.....	29.0	28.0	28.0	19.6	19.6
Do.....	San Francisco.....	102.0	248.5	209.0	156.2	168.0

¹ Estimated quantity of hog products obtained from 100 pounds of hog.

Computed from data from railroad tariffs.

A somewhat similar relation between freight charges on hogs and hog products also prevails in the case of movements from other points between the Missouri and Mississippi Rivers and Chicago. From Omaha to Chicago, the freight charge on hog products obtained from 100 pounds of hog is about 63 percent of the rate per 100 pounds on hogs, which is about the same relationship as exists for movements of hogs and hog products from other Corn Belt points west of the Missouri River to Chicago.

The situation is somewhat different in the area east of the Mississippi River (official territory). For example, from Chicago to New York the freight charge on the products obtained from 100 pounds of hog is equal to 80 percent of the rate per 100 pounds on live hogs. From western Corn Belt points to the eastern region, as from Des Moines to New York, rates are made on the basis of a combination of the rates in the two territories. Hence, the relatively low rates on hog products in the western territory are reflected in the through rates from points in this territory to eastern points.

It will be observed in table 13 that the rate relationship on the westward movement of hog products is very different from the relationship of rates on the eastward movement. Freight charges on hog products obtained from 100 pounds of hog from Omaha to points on the west coast, such as San Francisco, are more than 50 percent higher than the charge per 100 pounds of hog between the same points. This relationship between freight charges on hogs and hog products on westward movements is in marked contrast to the relationship in the case of the eastward movements, which tends to encourage shipment of hog products rather than hogs. It appears, however, that the relationship of freight charges favoring the shipments of hogs westward (as compared with hog products) also may have contributed to the growth of direct marketing. A large part of the hogs shipped to the west coast in recent years have been purchased direct in Nebraska and other western Corn Belt States. If freight rates on westward movements had favored shipments of hog products, it is possible that a considerable proportion of the hogs actually shipped westward would have been consigned for sale to public markets such as Omaha, Sioux City, and Kansas City, and larger quantities of hog products would have been shipped from these points westward.

The difference in transportation charges of packers located in different regions which results from existing freight-rate relationships on hogs and hog products may be illustrated by comparing charges for the movement of hogs and of hog products from Des Moines to New York. As is shown in table 13, the rate on hogs in double-deck cars between these points is 77 cents per 100 pounds. On the other hand, on the basis of prevailing rates on hog products, the yield of such products from 100 pounds of hog (roughly 25 pounds of fresh pork and 45 pounds of cured pork and lard) can be shipped from Des Moines to New York for 56 cents. It appears therefore that, insofar as freight rates are concerned, packers who ship hog products from Des Moines to New York have an advantage of 21 cents per 100 pounds of hog as compared with packers located in the New York area who ship hogs from Des Moines to New York. Likewise, from Des Moines to Chicago the freight rate on hogs is 34 cents per 100 pounds, whereas the hog products obtained from 100 pounds of hogs can be shipped from Des Moines to Chicago for 17.5 cents, or

for 16.5 cents less than the freight charge per 100 pounds of hogs between these points. It should be noted, however, that freight rates are only one of several factors affecting competition between packers in different regions. Some of the other factors will be discussed briefly later in this chapter.

To determine what effect these freight-rate relationships may have had upon the location of the packing industry and upon the growth of direct marketing, it is necessary to compare freight rates on hogs and hog products during the period in which geographical shifts in the industry and changes in methods of hog marketing occurred.

The freight rates on hogs, fresh pork, cured pork, and lard have been changed several times since 1910 and at present are on a much higher level than before the World War (fig. 12). The major changes occurred with the horizontal increases in freight rates in 1917, 1918, and 1920, and the horizontal reduction in 1922. With the exception of the 5-percent increase in official territory (roughly the region east of the Mississippi River and north of the Potomac and Ohio Rivers) occurring in 1914 and 1915, other changes were the results of adjustments within the rate structures affecting rates in particular areas. After 1910 the first major change took place in 1917, when rates on cured pork and lard were increased by 15 percent in official territory. Early the next year the rates on hogs and fresh pork also were increased 15 percent. This increase was followed on June 25, 1918, by a general increase in freight rates of 25 percent, but with a maximum increase of 7 cents per 100 pounds on livestock. On August 26, 1920, the Interstate Commerce Commission granted a general increase in freight rates of 35 to 40 percent on most commodities. From this date until 1922 the rates were at their highest level. A voluntary reduction of 10 percent on many of the livestock rates was made by the railroads on January 1, 1922, and this was made permanent when the Commission prescribed a general reduction of 10 percent the following July. Further slight reductions in the freight rate on some movements of hogs and hog products were made in the period 1928-30. The changes in freight charges on hogs and on hog products from 1910 to 1934 are given in table 56 for a greater number of movements than are shown in figure 12.

In comparing changes in freight rates on hogs and hog products since 1910, the rate per 100 pounds on hogs was compared with the freight charge for the yield of hog products obtained from 100 pounds of hog. Since the movements of hog products can include varying proportions of fresh and cured pork it was assumed in one comparison that all pork was shipped fresh, and the freight charge was computed for 55 pounds of fresh pork and 15 pounds of lard. In the other case it was assumed that only products ordinarily sold fresh to consumers were shipped in that form, and the charge was computed for 25 pounds of fresh pork and 45 pounds of cured pork and lard.

On the basis of the above comparisons, the spread in cents between the freight charge on hogs and on the yield of hog products measures at any given time the comparative advantage in freight charges of shipping hog products as compared with shipping hogs. The changes in this spread for selected movements and for the two different proportions of fresh pork, from 1910 to 1934, are shown in figure 13.

The margin or spread between freight charges on 100 pounds of hog and 70 pounds of hog products from Des Moines to Chicago and New

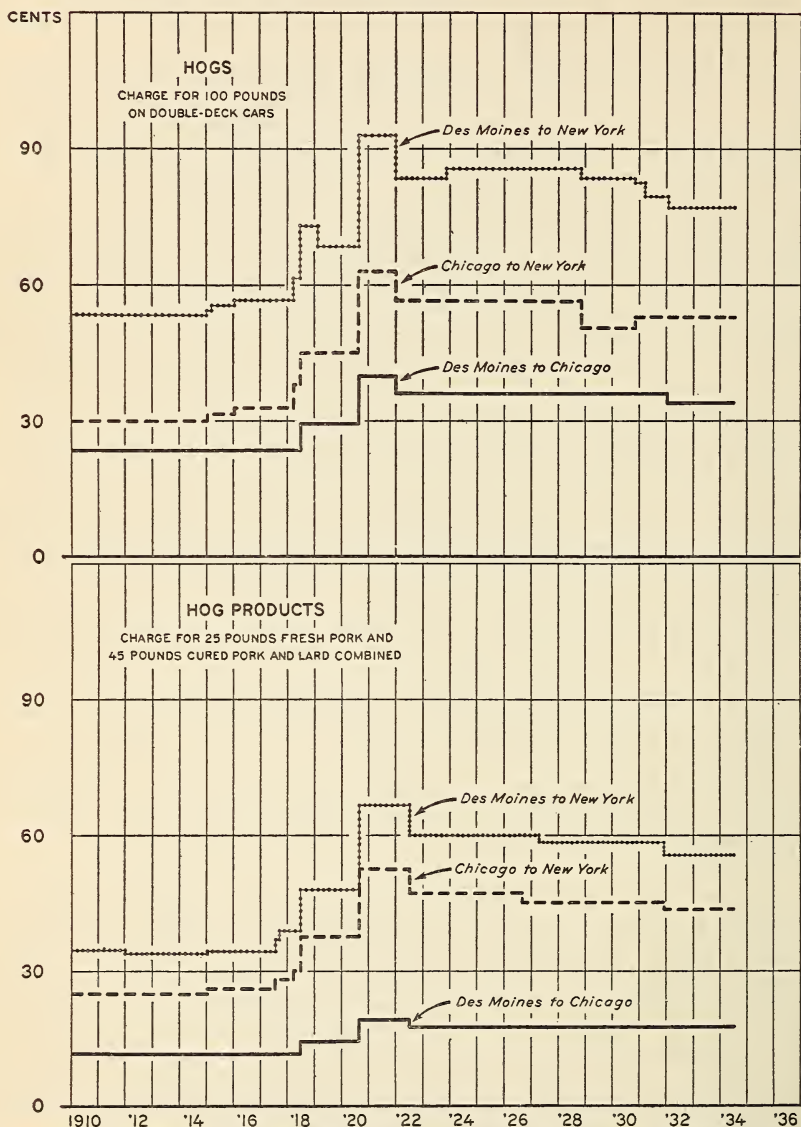


FIGURE 12.—FREIGHT CHARGES ON HOGS AND HOG PRODUCTS BETWEEN SELECTED POINTS, 1910-34.

Freight charges on both hogs and hog products have increased materially since 1910, with most of the increase occurring in the period 1917-20. In 1922 freight charges were reduced somewhat, and further slight reductions have been made since 1925, but the general level of such charges is still higher than in the pre-war period. Throughout the period 1910-34 in the case of nearly all eastward movements from the Corn Belt the freight charge per 100 pounds of hog has been greater than the charge on hog products obtained from the 100 pounds of hog.

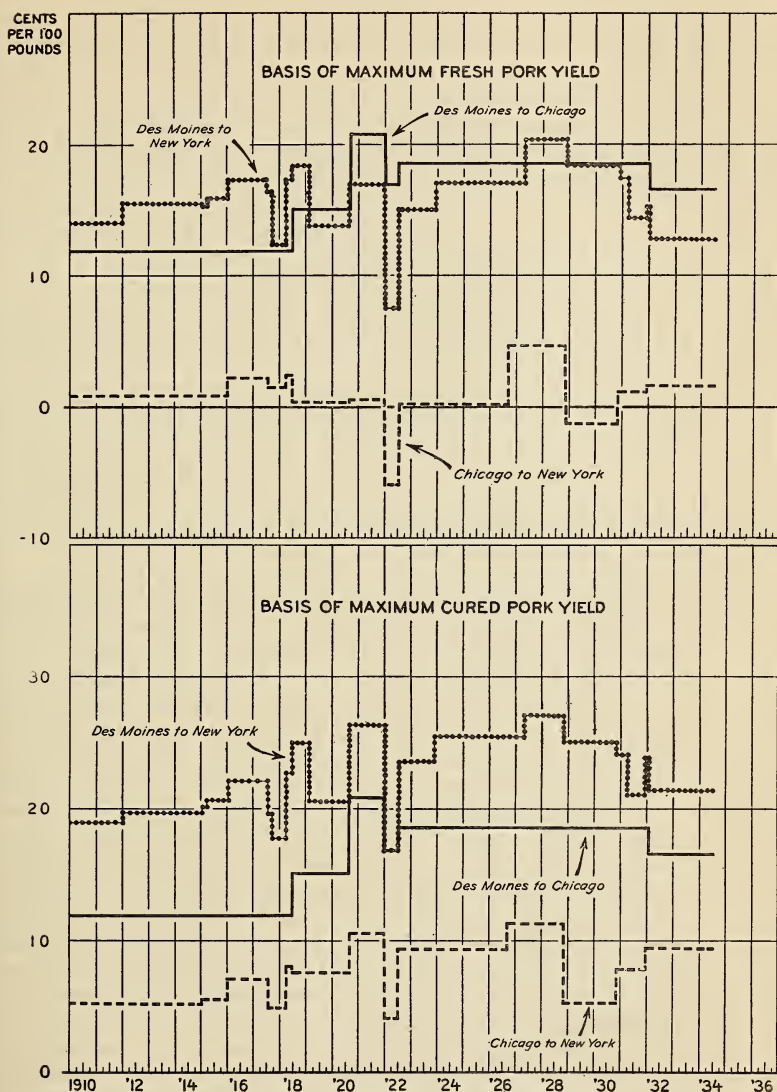


FIGURE 13.—SPREAD BETWEEN FREIGHT CHARGES ON 100 POUNDS OF HOGS AND 70 POUNDS OF HOG PRODUCTS BETWEEN SELECTED POINTS, 1910-34.

The upper section of this figure shows the spreads between the freight charge on hog products and the charge on hogs for selected movements, from 1910 to 1934, when a maximum quantity of hog products was shipped as fresh products. Similarly the spreads between charges for the same movements when a maximum quantity of hog products was shipped cured are shown in the lower section. The spread has widened materially in the last 20 years on the movement from Des Moines to Chicago regardless of the proportion of fresh pork shipped. On the movements from Des Moines to New York and Chicago to New York the spread has widened only slightly when a maximum quantity of fresh pork is shipped, but has widened considerably when a maximum quantity of cured pork is shipped. Des Moines is a typical point of origin for the northwestern Corn Belt, Chicago for the eastern Corn Belt and New York represents a large market outlet for hogs and hog products.

York was used to represent the movement from the western Corn Belt, and the margin between charges on these items from Chicago to New York was taken as representative of the area east of the Mississippi River. Comparisons of rates on hogs and hog products for movements between other points are given in table 56. It will be noted in figure 13 that the spread in the case of both proportions of fresh pork on shipments from Des Moines to Chicago increased somewhat during the period 1910-34. The spread also has tended to increase in the case of movements from Chicago to New York and Des Moines to New York when the shipment included a relatively small proportion of fresh pork. On movements from both Chicago and Des Moines to New York, when the charge was computed for a relatively large proportion of fresh pork the spread has shown no definite tendency to increase or to decrease during the 25-year period. Most of the increase in the spreads between the above-mentioned freight charges occurred from 1915 to 1921. From 1922 to 1928 the increase in the spread between charges on hogs and on hog products which occurred from 1915 to 1921 was maintained in most instances. Since 1928 the spread has been reduced somewhat, but in the case of most movements it is slightly greater than in the period from 1910 to 1915. This increase in the margin or spread was probably a factor of some importance in the increase in hog packing in the western Corn Belt which occurred in the post-war period.

Although changes in relationships between freight charges on hogs and hog products have affected the packing industry to some extent, the general level of freight rates on hogs and on hog products (that is, whether these rates in themselves are high or low) apparently has had little influence upon the shifts in location of the hog-packing industry and hence on the direct marketing of hogs. However, important changes in freight rates are usually made on a percentage basis, and frequently the same percentage change is applied to the entire rate structure. Since freight rates per 100 pounds on hog products, especially fresh pork, are usually higher than the rate per 100 pounds on hogs, a given percentage increase in rates on hogs and hog products in some instances would cause the increase in cents per 100 pounds to be greater in the case of hogs than for hog products. As already pointed out, in the period since 1910 the spreads between freight charges on hog products and charges on hogs have tended to increase.

Thus it appears that the increase in the rate level has been accompanied by an increase in the margin between freight charges on hogs and the charges on hog products. For example, in 1910, when the level of freight rates was relatively low the rate per 100 pounds on hogs from Chicago to New York was 30 cents, which was about 5 cents higher than the freight charge on the yield of hog products between these points. In 1927, when the rate level was relatively high, the freight rate per 100 pounds on hogs between Chicago and New York was 56.5 cents, and the differential between freight charges on 100 pounds of hog and on 70 pounds of hog products was about 11 cents. In this way, changes in the level of rates have affected freight-rate relationships, and may thereby have caused advantages or disadvantages to packers operating in different regions.

Several transportation costs in addition to actual freight rates occur in the shipment of hogs and hog products. For hogs these costs include such items as loading, unloading, bedding, feeding,

shrinkage, etc. Some of the items are effective for hauls of any length, whereas others arise generally on the longer hauls. On the other hand, fresh and cured pork, especially the former, require refrigeration, and the cost of refrigeration varies by seasons and by lengths of haul. Weights of containers used for pork and lard are included with shipping weights, thus increasing the cost per net pound. Shrinkage and spoilage also occur in the case of meats, especially fresh pork. But when all items are considered it appears probable that the costs in addition to freight rates on the movement of hogs tend to offset, at least to a large extent, the additional costs related to the shipment of hog products.

DIFFERENCES IN FREIGHT RATES PER TON-MILE

A common characteristic of freight-rate structures in the United States is that rates do not increase proportionately with distance. In establishing rates, consideration is given to terminal costs, carrier competition, and value of service, as well as distance of haul. Because of this, packers located at points between the large surplus hog-producing areas and the large consumer market in the East have higher charges per ton-mile on shipments of pork and lard. Packers so located in many instances receive hogs from points west of them at a local rate. They then ship hog products eastward also at a local rate. On the other hand, packers located closer to the hog supply have a through rate eastward on shipments of hog products.

In addition to lower charges per ton-mile resulting from the longer haul freight charges to packers located near the hog supply are also less because of the relatively lower freight charges for hog products than for hogs. In a comparison of freight charges for packers located near the surplus hog supply with charges of packers located intermediate to the large hog-surplus area and the large consuming markets, both factors above mentioned are important. The differences in charges resulting from these factors are illustrated in figure 14, which shows the freight charge per 100 pounds of hogs from Des Moines to Chicago plus the freight charge on 70 pounds of hog products from Chicago to New York during the period 1910-34 and also the freight charge on 70 pounds of hog products from Des Moines to New York for the same period. Throughout the period since 1910 the freight charge on hog products from Des Moines to New York has been less than the combined charge on hogs from Des Moines to Chicago and on hog products from Chicago to New York. It will be noted in the lower section of this figure that the spread between these charges has widened from about 14 cents in the pre-war period to about 22 cents per 100 pounds of hogs or products thereof in 1934.

In general it appears that packers located in the western Corn Belt (western trunk line territory) have lower freight charges per ton-mile than do packers located in the eastern Corn Belt. The disadvantage to packers in the latter area which results from this situation is brought about chiefly by the relation of their location to the hog supply. Packers in both the eastern and the western Corn Belt sell hog products in large quantities in the East, that is, in the densely populated area east of the State of Ohio and north of the Potomac River. Prices of hog products in this area therefore represent prices received by packers located in both the eastern Corn Belt States and the western Corn Belt States.

If packers in the eastern Corn Belt States were able to obtain hogs in sufficient quantities from nearby points to operate their plants throughout the year at near-optimum volume they would not be greatly affected by the higher freight charges per ton-mile. But since some of them find it necessary to buy some hogs in the western Corn Belt States, they enter into direct competition with packers located in that area, whose freight charges per ton-mile are lower. Hence, the level of prices in the eastern Corn Belt, at some seasons of the year at least, tends to equal prices in the western Corn Belt States plus freight charges on the movement of hogs from the western Corn Belt States to the eastern Corn Belt States.

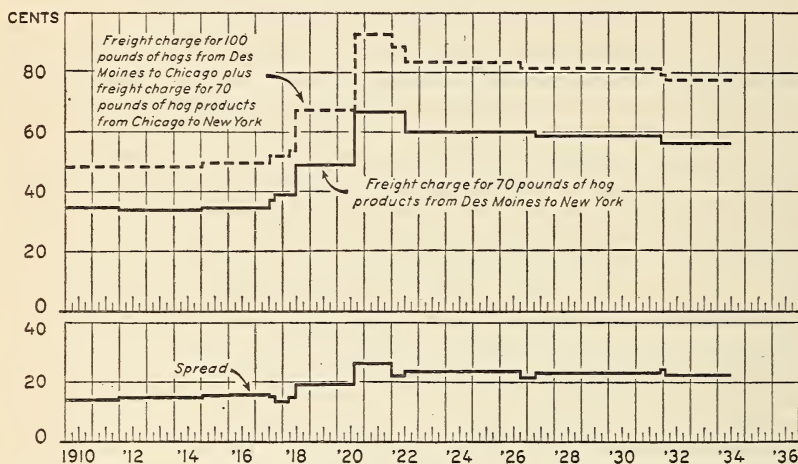


FIGURE 14.—FREIGHT CHARGES ON HOGS AND HOG PRODUCTS FROM DES MOINES TO NEW YORK AND SPREAD BETWEEN SUCH CHARGES, 1910-34.

Throughout the period since 1910 the combined freight charge on the movement of 100 pounds of hog from Des Moines to Chicago and on the movement of 70 pounds of hog products from Chicago to New York has been greater than the freight charge on the movement of 70 pounds of hog products from Des Moines to New York. As shown in the lower section of this figure the difference between these charges has increased somewhat in the last 20 years. The lower charges on the direct shipment from Des Moines to New York are due to the lower charges on hog products than on hogs and to the fact that in one case the charge represents a combination of local freight rates from Des Moines to Chicago and local rates from Chicago to New York, whereas in the other case the charge is based on through rates from Des Moines to New York.

In addition, as has already been pointed out, the freight charge per ton-mile on hog products from points in the eastern Corn Belt eastward is greater than similar charges per ton-mile on eastern movements from the western Corn Belt. Thus it appears that the total cost to packers on hog products shipped to the East from the eastern Corn Belt tends to be higher than the cost to packers of products shipped from the western Corn Belt. In any event, when hogs are shipped from the western Corn Belt to points in the eastern Corn Belt States for slaughter, and the resulting products are shipped to eastern points, the freight charges on the entire movement are higher than are the freight charges on hog products shipped from the western Corn Belt to the same points of destination.

EFFECTS OF FREIGHT RATES AND FREIGHT-RATE RELATIONSHIPS ON THE DIRECT MARKETING OF HOGS

It has been pointed out earlier in this chapter that the chief effect of freight rates and their relationships as between regions and as between hogs and hog products on direct marketing has been through the result of such relationships on the packing industry in different sections of the country. It has been shown that during most of the period since 1910, the relationships of freight rates on hogs and hog products have favored the slaughter of hogs near the source of supply. Regional differences in freight charges also have tended to favor the packing industry in the western Corn Belt. In so much as packers whose plants are located in the western Corn Belt tend to purchase the major proportion of their hogs direct, any factor that causes an expansion in the packing industry in this area would tend to encourage the direct marketing of hogs.

It should be recognized, however, that freight charges are only one of the costs in the packing industry. Hence, differences in freight charges are only one measure of comparative advantages or disadvantages of packers in different regions. Labor costs, for example, are much more important than freight charges, and the cost of materials, other than hogs, used in processing is also more important. In periods when all or many of the operating costs in the industry were relatively high, small differences in freight charges between regions probably were of little significance. This situation apparently prevailed in the years from 1917 to 1921, when costs of manufacturing and processing in general were high.

Other factors, such as quality of hog products processed and the character of the market outlet for products, may also have operated to offset differences in freight charges between regions. An example of the first factor is the preference and premium paid for locally dressed fresh pork in the East. Hence, even though fresh pork could be shipped from the western Corn Belt eastward more cheaply than hogs, the premium paid by consumers for pork from hogs slaughtered locally might more than offset the disadvantage of higher freight charges to eastern packers. In recent years, however, market observations indicate that in many cases this premium for locally dressed pork in the East has been reduced considerably. Consequently the higher freight charges on hogs as compared with hog products may be more disadvantageous to eastern packers than formerly.

CHAPTER 4

RELATION OF DIFFERENCES IN WAGE COSTS IN THE PACKING INDUSTRY TO DIRECT MARKETING

It was shown in the preceding section of this report that packers in the interior whose plants are located in the northwestern Corn Belt States have had certain advantages as compared with packers whose packing plants are located east of the Mississippi River because of differences in freight rates as between hogs and hog products and as between regions. In addition to this advantage, it appears that labor costs of packers located in the northwestern Corn Belt generally have been less than those of packers located east of the Mississippi River. Since interior packers buy hogs direct almost exclusively, factors that have encouraged the development of interior packing have also contributed indirectly to the growth of direct marketing.

Although it has not been possible to make a thorough study of wages, salaries, and other operating costs of the packing industry, certain differences in wage costs in the industry as reported by the Bureau of the Census are significant in this connection. The reports of the Census of Manufactures¹³ give for several States the average number of wage earners and the total amount expended for wages in the packing industry for each census year. Other items, including the dressed weight of livestock slaughtered, are also reported by States insofar as possible.

In comparing wage costs of packers located in the interior with those of packers located at public markets, differences in wage costs in the packing industry between Iowa and in some other States are important. In general, a major proportion of the hogs slaughtered commercially in Iowa are slaughtered and processed by interior packers, who buy most of their hogs direct. Sioux City is the only public market in Iowa, but the published census reports do not segregate data for the packing industry in Sioux City from those of the rest of the State. On the other hand, most of the commercial slaughter of hogs in Illinois is done by packers whose plants are located at public-market points. To a considerable extent packers located in Illinois and Iowa compete for hogs produced in Iowa. In most other States the proportion of the commercial hog slaughter at public-market points is not so large as in Illinois, but is larger than in Iowa. Hence data on wage costs as reported by the Census of Manufactures for most States other than the two mentioned are unsatisfactory for comparing wage costs in interior packing plants and public-market plants. However, since a large proportion of the hogs slaughtered commercially in New York are purchased at public markets in the Corn Belt, wage costs in the packing industry in that State have been compared with such costs in Iowa and Illinois.

¹³ From 1899 to 1919 this census was taken every 5 years, but beginning with the latter year it has been taken in all odd-numbered years.

TABLE 14.—*Wages in the packing industry in the United States, New York, Illinois, and Iowa in specified years, 1914-31*

Year	United States		New York		Illinois		Iowa	
	Wages per worker	Wage cost per 100 pounds dressed weight of live-stock slaughtered ¹	Wages per worker	Wage cost per 100 pounds dressed weight of live-stock slaughtered ¹	Wages per worker	Wage cost per 100 pounds dressed weight of live-stock slaughtered ¹	Wages per worker	Wage cost per 100 pounds dressed weight of live-stock slaughtered ¹
1914-----	\$628.70	\$0.62	\$738.19	\$0.61	\$615.87	\$0.77	\$618.40	\$0.49
1919-----	1,301.20	1.56	1,349.42	1.24	1,476.26	2.30	1,224.87	1.07
1921-----	1,306.39	1.25	1,564.81	1.36	1,295.01	1.56	1,250.13	.96
1923-----	1,261.89	1.07	1,550.57	1.24	1,277.50	1.34	1,154.96	.76
1925-----	1,323.31	1.10	1,610.84	1.31	1,371.44	1.41	1,136.18	.76
1927-----	1,356.76	1.11	1,660.71	1.43	1,393.06	1.42	1,156.44	.74
1929-----	1,353.96	1.09	1,624.45	1.45	1,363.44	1.38	1,206.63	.78
1931-----	1,260.74	.93	1,529.23	1.20	1,324.80	1.18	1,104.32	.63

¹ Includes hogs, cattle, calves, sheep and lambs, except for Iowa in 1914, when calves were not separately reported for that State.

Computed from data reported by the Bureau of the Census.

DIFFERENCES IN WAGES PER WORKER

Table 14 shows the computed yearly average wages per worker and the wage cost per 100 pounds dressed weight of livestock slaughtered in the packing industry for the United States and for New York, Illinois, and Iowa, for the census years from 1914 to 1931, inclusive. Percentage changes in these wages and wage costs since 1914 are shown in table 15. Yearly wages per worker in the packing industry were about the same in Illinois as in Iowa in 1914. By 1919 wages per worker in the industry in Illinois were about 140 percent greater than in 1914, in Iowa they were about 100 percent greater than in 1914, and in New York they were only about 85 percent greater. But wages per worker in the packing industry in New York in 1914 were somewhat higher than in either Iowa or Illinois, while in 1919 they were lower than those in Illinois but higher than those in Iowa. In the other census years from 1914 to 1931, however, wages per worker in New York were greater than in either Illinois or Iowa.

TABLE 15.—*Index numbers of wages in the packing industry in the United States, New York, Illinois, and Iowa in specified years, 1914-31*
[1914=100]

Year	United States		New York		Illinois		Iowa	
	Wages per worker	Wage cost per 100 pounds dressed weight of livestock slaughtered	Wages per worker	Wage cost per 100 pounds dressed weight of livestock slaughtered	Wages per worker	Wage cost per 100 pounds dressed weight of livestock slaughtered	Wages per worker	Wage cost per 100 pounds dressed weight of livestock slaughtered
1914-----	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1919-----	207.0	251.6	182.8	203.3	239.7	298.7	198.1	218.4
1921-----	207.8	201.6	212.0	223.0	210.3	202.6	202.2	195.9
1923-----	200.7	172.6	210.1	203.3	207.4	174.0	186.8	155.1
1925-----	210.5	177.4	218.2	214.8	222.7	183.1	183.7	155.1
1927-----	215.8	179.0	225.0	234.4	226.2	184.4	187.0	151.0
1929-----	215.4	175.8	220.1	237.7	221.4	179.2	195.1	159.2
1931-----	200.5	150.0	207.2	196.7	215.1	153.2	178.6	128.6

Computed from data shown in table 14.

It will also be observed in table 14 that in most years from 1921 to 1931 wages per worker in the packing industry in Illinois were substantially higher than those in Iowa; in 1921 they were only 4 percent greater, but in 1925, 1927, and 1931 they were about 20 percent greater, and in 1923 and 1929 they were more than 10 percent higher. As will be seen in table 15, wages per worker in Illinois in all of the census years from 1921 to 1931 were more than twice as great as in 1914, whereas in Iowa wages per worker were twice as large as in 1914 in only 1 year in this period—1921. From 1923 to 1931 wages per worker in the latter State varied roughly from 80 percent above those of 1914 in 1931, to 95 percent above in 1929. In all of the census years from 1921 to 1931 wages per worker in the packing industry in New York were more than twice as large as in 1914. Wages per worker in the packing industry in Iowa in the census years from 1919 to 1931 also were lower than those in most other Corn Belt States, although the difference in most cases was not so great as that between those in Iowa and in Illinois.

On the basis of data available, it has not been possible to make comparisons of salaries in the packing industry for the several States as has been done in the case of wages. It is of interest, however, that reports of the Census of Manufactures also indicate that the average yearly salary per salaried worker in the packing industry in Iowa was somewhat less than for the industry in Illinois in the census years from 1919 to 1929, inclusive. Data on salaries in the packing industry were not reported in the Census of Manufactures for 1931.

DIFFERENCES IN WAGE COSTS PER 100 POUNDS DRESSED WEIGHT OF LIVESTOCK SLAUGHTERED

In addition to the lower wages per worker in Iowa as compared with those in Illinois and New York, in each of the census years from 1914 to 1931 the wage cost per 100 pounds dressed weight was materially lower in Iowa than in Illinois or New York and less than the average for the country as a whole. In 1914 the difference between Iowa and Illinois amounted to 28 cents per 100 pounds, by 1919 it was more than \$1, and in all census years from 1921 to 1931 it was more than 50 cents per 100 pounds. In all years except 1919 the wage cost per 100 pounds dressed weight in the packing industry in New York did not vary greatly from that in Illinois. It is shown in table 15 that, just as in the case of wages per worker, the wage cost per 100 pounds dressed weight of livestock slaughtered increased much more in Illinois from 1914 to 1919 than in Iowa. In 1921 in both States the wage cost per 100 pounds dressed weight was about twice as great as in 1914. But in all of the census years from 1923 to 1931, inclusive, the wage cost per 100 pounds dressed weight in Illinois was higher relative to the 1914 level than was the case in Iowa.

The wage cost per 100 pounds dressed weight of all livestock slaughtered may not be an exact measure of differences in labor costs per unit of output in the packing industry in the several States, because of variations in the proportions of different kinds of livestock slaughtered, and because of variations in packing operations involving the relative proportions of hog products that are sold fresh and sold cured. The proportion of the different classes of livestock slaughtered is considerably different in Iowa from that in New York and Illinois, as is shown in table 16. In all of the census years from 1914 to 1931,

inclusive, from 75 to 87 percent of the total number of livestock slaughtered in Iowa was hogs, while in Illinois from 50 to 63 percent of the total number in the several years were hogs. The proportion of both cattle and calves and sheep and lambs in the total slaughter of livestock was considerably larger in Illinois than in Iowa in all years. In New York the proportion of hogs in the total livestock slaughter in all census years was much smaller than in either Iowa or Illinois, ranging from 31 to 43 percent of the total number of animals slaughtered at plants in that State.

TABLE 16.—Percentage of total number of livestock slaughtered in wholesale establishments represented by each class, United States, Illinois, Iowa, and New York, 1914, 1919, 1925, and 1931

Year and classification	United States	Illinois	Iowa	New York	Year and classification	United States	Illinois	Iowa	New York
	Percent	Percent	Percent	Percent		Percent	Percent	Percent	Percent
1914:					1925:				
Cattle.....	12.0	13.0	7.5	13.4	Cattle.....	13.8	17.7	9.6	9.9
Calves.....	3.4	3.0	.5	8.0	Calves.....	7.4	5.6	1.6	11.7
Sheep and lambs..	26.8	33.9	10.5	42.2	Sheep and lambs..	17.4	21.7	5.4	35.4
Hogs.....	57.8	50.1	81.5	36.4	Hogs.....	61.4	55.0	83.4	43.0
1919:					1931:				
Cattle.....	14.8	16.0	10.8	15.3	Cattle.....	11.0	12.6	9.2	7.5
Calves.....	6.0	4.6	1.1	13.2	Calves.....	6.5	4.8	1.6	11.1
Sheep and lambs..	18.4	24.1	6.5	34.3	Sheep and lambs..	24.1	23.9	13.9	50.6
Hogs.....	60.8	55.3	81.6	37.2	Hogs.....	58.4	58.7	75.3	30.8

Computed from data reported by the Bureau of the Census.

In addition to these possible variations in labor costs per 100 pounds dressed weight as among the different classes of livestock, considerable variation in labor costs per 100 pounds of hog probably exists between packing plants, depending on the proportion of hog products which are cured or sold fresh. In packing plants where the bulk of the hog products is sold as fresh meat, labor costs per unit usually are lower than in plants where a greater proportion of hog products are cured. It should also be pointed out that for packing plants where relatively large quantities of fresh pork or dressed hog carcasses are bought for curing and processing, labor costs per 100 pounds of dressed weight of livestock slaughtered would not represent labor cost per unit of output for such plants. Reports of the Census of Manufactures indicate that in most census years the quantity of cured pork products produced in Illinois was considerably larger relative to the total dressed weight of hogs slaughtered than was the case in Iowa.

DIFFERENCES IN EARNINGS PER HOUR

The differences in wages per worker in the packing industry in Iowa, Illinois, and New York, as shown by data compiled from the Bureau of the Census reports, are substantiated by information contained in reports of the Bureau of Labor Statistics on wages and hours of labor in the meat-packing industry for specified years from 1917 to 1931, inclusive (14). Table 17 shows average earnings per hour of male and female workers in the packing industry in Iowa, Illinois, New York, and the United States as a whole for 1925, 1927, 1929, and 1931. In each of the 4 years earnings per hour for both sexes in the industry in Iowa were somewhat less than in Illinois and New York

and were below the average for the country as a whole. As between Iowa and Illinois, the difference in earnings per hour ranged from 5 to 9 cents in the 4 years for which data by States are available.

TABLE 17.—Average earnings per hour of workers in the slaughtering and meat-packing industry in the United States and selected States, 1925, 1927, 1929, and 1931

Year	United States		New York		Illinois		Iowa	
	Males	Females	Males	Females	Males	Females	Males	Females
	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>
1925.....	50.7	35.9	55.3	34.7	51.8	38.2	46.8	32.5
1927.....	52.0	36.4	60.2	35.8	52.7	39.6	47.2	32.0
1929.....	52.5	36.9	58.8	37.5	55.3	40.5	46.3	31.9
1931.....	47.0	32.1	51.9	30.9	48.8	35.9	43.8	29.3

Compiled from reports of Bureau of Labor Statistics (14).

EFFECT OF DIFFERENCES IN WAGE COSTS ON INTERIOR PACKING

It is significant that wage costs for the packing industry, whether calculated on the basis of wages per 100 pounds dressed weight of livestock slaughtered or on the basis of wages per worker or earnings per hour, have been lower in Iowa than in Illinois and New York. It is not probable that wages per worker or earnings per hour in the industry would be affected greatly by the differences in the proportion of the several classes of livestock slaughtered or by differences in the character of packing operations. The data for total wages and for total number of workers in the packing industry appear to be fairly comparable for the several States. Even if the data here used on wages per worker in the packing industry in Iowa, Illinois, and New York were not exactly comparable, the fact remains that wages per worker increased much more in Illinois and New York after 1914 than in Iowa, thereby lowering wages in Iowa relative to those in the other two States in this period. Thus it appears that packers whose plants were located in Iowa have had a competitive advantage over those with plants located in Illinois, New York, and perhaps other States, because of lower labor costs. In view of the close relationship of the packing industry in Iowa to the direct marketing of hogs, this advantage doubtless was a factor of some importance in causing the growth of direct marketing.

The lower wage costs in interior packing plants in Iowa as compared with those at public-market packing plants in Illinois probably are due to the fact that interior plants are located chiefly in small cities and towns where living costs generally are less than in larger cities where public-market packing plants are located. A tendency toward decentralization in industry has prevailed generally during the last decade. Some operators in many industries have moved from larger cities to smaller centers in order to take advantage of lower costs for labor as well as lower costs for other items. It is not improbable that the growth of interior packing is partly a reflection of this tendency.

CHAPTER 5

TYPES OF MARKETS FOR HOGS: MARKET AGENCIES, THEIR FUNCTIONS, METHODS, AND PRACTICES

Changes in livestock-marketing methods and the growth of direct marketing were discussed earlier in this report. To facilitate the analysis and appraisal of these developments as they now affect the various interests concerned with the marketing of livestock, a survey was made of the various types of markets now available to livestock producers and of the various agencies connected therewith and of their functions and practices. In gathering this information, contacts were made with 302 agencies (fig. 15), including 29 public



FIGURE 15.—Number of livestock markets of the different types which were included in the study of direct marketing. These include 83 packing plants buying direct, 47 auctions, 101 concentration yards, and 29 public markets. In addition, information was obtained from 21 livestock exchanges and 21 cooperative sales agencies which were located at public markets.

livestock markets, 21 livestock exchanges, 47 auctions, 101 concentration yards, 83 packing plants which buy some or all of their hogs direct, and 21 cooperative livestock sales agencies. Contacts also were made with many farmers and local livestock dealers to learn their reaction toward the various types of markets and methods and practices in marketing (fig. 16).

The principal types of markets used in the marketing of hogs are public markets, concentration yards, packing plants, local buyers, and auction markets. Each type differs from the others in the nature of the services rendered, in convenience to farmers, in the charges levied, and in the methods and practices used.

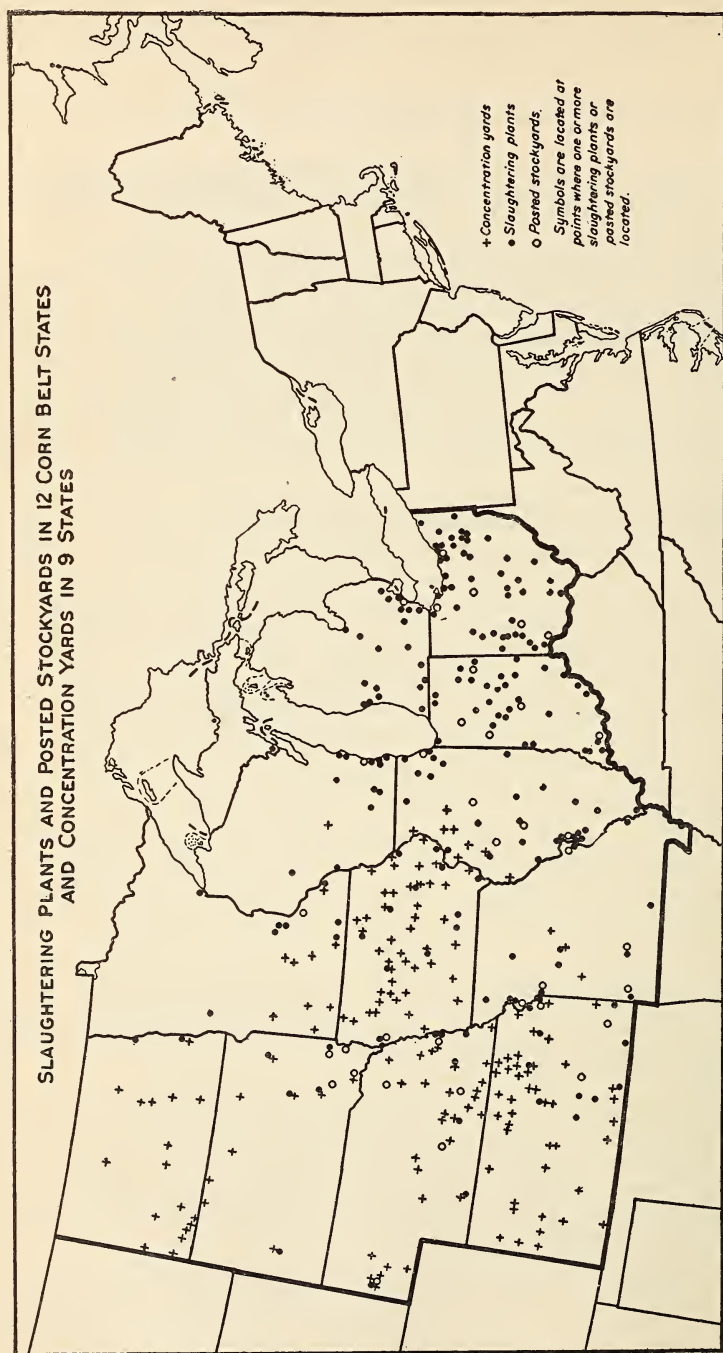


FIGURE 16.—Location of slaughtering plants and posted stockyards in 12 Corn Belt States, and concentration yards in 9 States. Concentration or reload privileges are confined to areas west of Chicago and are most common in the western Corn Belt.

PUBLIC MARKETS

Public livestock markets are livestock trading centers where facilities are provided for receiving, caring for, and handling livestock, and where the privileges of buying and selling livestock are available to all who wish to use them.

PUBLIC-MARKET AGENCIES

There are the following agencies and organizations at most public stockyards: Stockyard companies, livestock commission firms, order buyers, yard traders, and livestock exchanges.

Stockyard companies.—The physical facilities of public livestock markets are owned, or leased and operated, by organizations or corporations known as stockyard companies. These companies usually do not engage in buying and selling livestock on the public market. They receive shipments of livestock and deliver them to the consignee, provide feed and water, weigh the livestock when sold, and render other incidental services for which they submit bills through the consignee.

Livestock commission firms.—Livestock commission firms at public markets are agencies that sell livestock received on consignment and buy livestock on orders, for which they charge a commission. In case of sales they remit to the consignors the proceeds of the sales after deducting all marketing charges, including freight, yardage, feed, insurance, commissions, etc. In addition, they keep their patrons informed regarding market conditions and perform various other services for the benefit of their patrons.

Cooperative livestock sales agencies on public markets are producer-owned commission firms. They usually charge the commissions allowed at the market but often distribute surplus earnings to their members in the form of patronage dividends.

Order buyers.—Order buyers are livestock brokers on public markets who buy livestock on order for shipment to packers and others elsewhere and charge commissions for their services. They compete with local packer buyers and others and are usually among the first on the market when trading begins in order to obtain the kinds and grades of animals wanted by those for whom they make purchases.

Yard traders.—Yard traders, dealers, or speculators buy livestock on public markets in anticipation of a profitable resale at the point of purchase or at some other market. They generally purchase small, mixed, and odd lots of livestock which they reassemble in more uniform lots for sale as slaughter animals or as stockers and feeders.

Livestock exchanges.—A livestock exchange is an organization composed largely of local market agencies at a public market. As a rule, all persons operating on the market who are in good standing may become members of the exchange, including the commission men, order buyers, and traders. The exchange prescribed rules and regulations pertaining to the trading practices of its members, determines the basis of uniform commissions which are subject to the approval of the Secretary of Agriculture (see Packers and Stockyards Act and Direct Marketing, p. 222), arbitrates disputes, maintains official dockers, maintains traffic bureaus to handle claim and rate cases for its members and their clients, and, in some instances, requires the bond-

ing ¹⁴ of its members for mutual and shipper protection. In markets where exchanges are not maintained, rules pertaining to practices have developed through custom. Separate traders' exchanges are found at some markets.

PUBLIC-MARKET PRACTICES

When hogs are received at public markets it is the practice of the consignee to put them in shape for sale by allowing them time to rest, giving them access to feed and water, and sorting them into market groups that will be attractive to buyers. The hogs are then sold and the proceeds, after deducting various marketing and transportation charges, are remitted to the shippers.

Feeding, watering, and "fill."—Feed and water are given to offset, as far as possible, the loss in weight between shipping point or farm and the market. A too-common practice is to give animals more feed than they can consume at the time, and much of it remains in the troughs and pens after the animals are sold and delivered. When "fill" from excessive feeding and watering is evident buyers tend to take this into account when bidding for such hogs. Since when heavy fill is reflected in relatively lower prices and since the feed often is excessive, wasted, and expensive, many farmers and shippers who formerly insisted on heavy feeding are now in favor of limiting feeding to humanitarian requirements.

Sorting and grading.—Hogs offered for sale on public markets usually are sorted somewhat, but the extent of sorting varies considerably among markets. Sorting is more for weight than for grade. Noticeably low-grade hogs usually are excluded, and two or more grades may be included in one lot. The practice of sorting has been increasing in recent years. If several grades are sold in one lot the price obviously represents the average for all qualities in the lot. In such cases Choice grade hogs sell for less than if they were sold by grade. Furthermore, if the "market top" for the day is established on the basis of such sales, strictly Good and Choice hogs sold later, on that market and on the markets that use that market as a guide, tend to be made on this basis.

Pricing, buying, and selling practices and charges.—The methods of arriving at prices vary at different public markets, depending to some extent upon their size and upon competing markets. At the major markets, buyers, usually one at a time, meet the salesmen at the pens, appraise the animals, learn asking prices, and make their bids. After more or less dickering the hogs are finally sold at the best price obtainable. At some of the smaller markets prices often are not agreed upon until information has been received as to the trend of prices at some larger market in their competing territory. At a few public markets, salesmen and buyers assemble and agree upon prices for certain weights and grades of hogs. The hogs are then sorted and weighed at the agreed prices.

It is the purpose of hog salesmen to get the highest price possible for the hogs. On the other hand it is the purpose of the buyer to pay as little as possible for them. At some of the larger markets buyers for the larger packers often delay their buying until smaller local packers and order buyers have obtained their supplies. An attempt was made

¹⁴ All market agencies are required to provide bond or other security under the requirements of the Packers and Stockyards Act.

in this study to ascertain whether this practice has been adopted recently or whether it was followed before direct buying of hogs by public market packers became important. Hence comments made by the Chicago Daily Drovers Journal relative to the daily hog market at Chicago were examined for the years 1912, 1914, 1920, 1932, and 1933 to determine whether such current comments as "packers stayed off the early market" and "packers stayed out till order buyers and local slaughterers had obtained their supply" indicated any significant change in the practices of packers in this matter. The nature and frequency of these comments suggest that the practice of the National packers of staying off the early market was as common during the earlier years when they bought all their hogs at public markets as during recent years when they have been buying a considerable volume of hogs direct.

Public-market charges.—An important item that has had an influence on the farmer's choice of method of marketing and type of market is that of marketing charges or costs. In the marketing of hogs through public markets certain costs are incurred which are largely avoided in direct selling. Among them are yardage, weighing, feed, insurance, and commissions. Since such charges do not vary with the price of hogs they represent a larger proportion of the value of the animals when prices are low than when prices are high. Greater attention is given to this item during periods of low prices for hogs than when the prices are high.

CONCENTRATION YARDS

DIRECT MARKETING FACILITATED BY CONCENTRATION YARDS

Concentration yards are private stockyards maintained for the purpose of assembling relatively large numbers of hogs for reshipment. They are usually located in areas of large hog production at points where adequate railroad facilities are available. Hogs originating either locally or at other points on the railroad are received, sorted, assembled, and weighed before being forwarded to final destination, with the through rail rate maintained between points of origin and destination. (See ch. 3.) Other privileges include minimum-weight allowances, double decking, mixing, weighing, and change of ownership. Many of these yards were built by railroad companies and sold or leased to those who operate them. They are operated by the packers who buy a large number of hogs direct, and by independent buyers who resell to packers or ship to public markets.

Assembly points are similar to concentration yards in their physical aspects and perform substantially the same functions but do not have as many railroad-tariff privileges. For general purposes they may be regarded as concentration yards.

The number of concentration yards increased materially in the Corn Belt during recent years largely because of the increase in direct buying by public-market packers. (Table 18.)

More than 52 percent of the concentration yards included in this survey were established during the 5 years, 1929–33, and 66 percent of these are located in the northwestern Corn Belt. The increase in the number of concentration yards was accompanied by an increase in the total number of hogs handled, but by a decrease in the average number handled by each yard (tables 19 and 57).

TABLE 18.—*Concentration yards in Northwestern Corn Belt, Southwestern Corn Belt, and Western Illinois and Wisconsin in operation at close of each year 1919-33*

Year	Yards at the end of the year	Increase during year	Year	Yards at the end of the year	Increase during year
	Number	Number		Number	Number
1919.....	19	-----	1927.....	51	5
1920.....	19	0	1928.....	54	3
1921.....	22	3	1929.....	106	52
1922.....	24	2	1930.....	119	13
1923.....	24	0	1931.....	133	14
1924.....	37	13	1932.....	179	36
1925.....	45	8	1933.....	195	16
1926.....	46	1			

PRICING AND PURCHASING HOGS AT CONCENTRATION YARDS

The methods by which hogs are priced and purchased at concentration yards and assembly points vary. The proportion of the hogs purchased by the different methods in the different areas for the 3 years 1931-33, is shown in table 58. They may be priced before delivery to the yards; priced upon arrival at the yards; priced and bought on track at original loading point; bought in the country by salaried representatives of the buyers or by private livestock dealers on the basis of country weights at agreed prices and delivered by truck or rail to the concentration yards.

TABLE 19.—*Number of hogs purchased at specified number of concentration yards and the average number purchased per yard, 1929-33*

Year	Concentration yards	Hogs purchased		Year	Concentration yards	Hogs purchased	
		Total	Average per yard			Total	Average per yard
	Number	Number	Number		Number	Number	Number
1929.....	50	4, 007, 285	80, 146	1932.....	82	5, 136, 880	62, 645
1930.....	56	4, 869, 295	86, 952	1933.....	90	5, 985, 668	66, 507
1931.....	69	5, 228, 071	75, 769				

Some concentration yards often quote prices for hogs with reasonable time allowance for the seller to make delivery, depending on the distance from the yards and the transportation facilities available. This practice varies among yards. Buyers at 39 of the yards stated that they require delivery the day of purchase, while those at 28 yards allow the seller 24 hours to make delivery. Thirty yards issue quotations in the morning and take all hogs offered that day, whereas 53 concentration yards hold their prices subject to change during the day, depending on general market conditions. Prices are subject to change during the day at approximately 90 percent of the yards in the northwestern Corn Belt, but even in such cases changes in prices are not frequent. In the eastern Corn Belt approximately 85 percent of the yards usually maintain the same price throughout the day.

RECEIVING HOURS AT CONCENTRATION YARDS

Most of the concentration yards covered in this survey keep an open market for hogs from early morning until late at night. Eighty-three yards accept delivery at any time, but 8 of them require that they be notified before delivery is made even though prices have previously been agreed on. The flexibility of receiving hours permits the farmer to make delivery at the time most convenient to him. Some concentration yards, adjust their operating hours according to stock-train schedules and accept hogs up to within an hour of train departure, even though the train may arrive after midnight.

PACKERS WHO BUY DIRECT

Many packers in the Corn Belt depend largely, if not entirely, on direct purchases for their supply of hogs. Included among these are the "interior" packers and some packers who are located at public-market points but at some distance from the public market. At a few public markets all of the packers located at such markets buy all or most of their supplies at public stockyards, whereas at other markets, some packers, especially the national packers, obtain a large proportion of their hogs direct. Some packers located elsewhere, especially in extreme eastern and western sections of the country, also get their Corn Belt hogs both direct and at public stockyards. Some of the latter have established concentration yards for this purpose, while others buy from local private dealers or private concentration yards and assembly points, and in some cases at auctions.

In general, the packers who buy hogs delivered at their plants are fully equipped with facilities for unloading, handling, weighing, and holding hogs.

MEANS OF OBTAINING SUPPLIES DIRECT

Packers who buy direct endeavor to maintain a dependable supply of hogs. In order to do this they have established their own concentration yards and in addition they maintain business relationships with local dealers, custom truckers, order buyers, and cooperative shipping associations. Regular truckers and dealers operate daily and know the type, quality, and location of the supply of hogs in their territories and can collect a larger proportion of the kinds of hogs desired by the packer on short notice than could be obtained from farmers who market what they choose to sell at their own convenience. Various methods are used by truckers who supply hogs direct to packers. Some buy hogs outright with their own capital; some are practically the agents of the packers; others are in the custom live-stock-trucking business. Local dealers, whether delivering at the plant or assembly point, perform essentially the same services as the local truckers except that in many cases the hogs are assembled locally and are delivered to the packer by rail.

GRADING BY PACKERS WHO BUY DIRECT

According to replies to questionnaires some system of grading is used by all packers who buy direct (ch. 6). Forty-five packing plants included in the study accepted all slaughter hogs offered and priced them by weights and grades, while 12 plants bought only certain selections; sixteen preferred certain weights and grades and although

accepting a limited number of other selections would not accept everything offered. The delivery of off-grade or unfinished hogs was discouraged by the packers by offering low prices. The relatively low prices offered were explained by the packers on the ground that they had a very restricted outlet for the products of such hogs.

ANNOUNCING AND CHANGING PRICES

The day's offering prices are announced at different hours by the several packing companies that buy direct. Some packers arrive at the early prices for the day on the basis of the previous day's market but subject to change according to the current day's developments. Operators at 27 plants reported that prices established early are continued unchanged throughout the day. Forty-three change their prices during the day as conditions warrant. When a change is made it may be due to an appreciable price change at other markets, to the volume of hogs received at the plant, or to definite changes in the meat or provision trade.

SETTLEMENT FOR HOGS BOUGHT DIRECT

Hogs may be received at plants at predetermined prices, received and priced upon arrival, purchased in the country by salaried representatives, purchased from private dealers or trucker buyers, or purchased through the packer's own concentration yards, and from concentration yards not owned by packers.

In table 58 are shown the number and percentage of hogs obtained from these various sources by a large number of direct-buying points, separated as between packing plants and concentration yards. The figures in this table are based on reports by these buyers as to the total number of hogs bought by them in each of the 3 years 1931-33 and their estimates of the percentage of the total that was obtained through these various channels.

Purchases of hogs by packers from concentration yards not owned by packers are usually made at prices mutually agreed upon. Yard operators usually telephone their packer customers, describing offerings and quoting prices. Calls sometimes originate with buyers, but the details of the transactions are the same in either case. There is considerable variation in the terms at which hogs are bought in this type of trading. Many of the plants in the northwestern Corn Belt receive hogs from various sources with no previously agreed price or time for delivery, but price them upon arrival. Methods of determining the weights on which settlement is made vary. Settlement may be made on shipping-point weights or weights of hogs delivered at the plants without feed or water, or 2 or 3 percent may be added to the actual off-car weight to compensate for a part of the shrinkage in transit. At some plants water only is given; at others feed also may be given before the weighing if the farmer or dealer so requests.

THE "BOARD PRICE" AND THE "ADD"

The packers and operators of concentrations yards who buy hogs direct in Iowa and southern Minnesota announce each day the minimum price they will offer for hogs of specified weights and grades. These base or minimum prices are called "board prices" or "card prices." In general there are variations among buyers in the same area as to

board prices quoted on the same day. In addition to this board price each buyer usually pays a variable amount commonly called the "add", and which is not generally announced publicly. The amount of the add actually paid depends upon circumstances such as the condition of the hogs when delivered, distance hauled, number of hogs of certain qualities, and weights desired, competitive conditions, etc. The maximum add varies among individual packers from as low as 10 cents to as high as 55 cents per 100 pounds, apparently depending largely on the relation of the respective board or base price to the general level of hog prices. In general, the sums of the board prices and the maximum adds of the different buyers in this area vary but little at any given time.

Use of the "add".—The add is used for many specific purposes. For example, from 10 to 15 cents per 100 pounds more may be paid for rail hogs from a distance than is paid for similar hogs received by truck from nearby sources because of the greater shrinkage in the rail hogs and because of the longer time that may be required in the rail transportation. The add is used to stimulate or retard receipts by increasing or decreasing prices paid to truck operators and other local buyers with whom packers and their concentration yards have close working arrangements. It provides a trading margin for the truckers and other local buyers who often share this margin with the producers. Through this cooperation between the large direct buyers and the local buyers and truckers it is possible to expand or curtail receipts at the plants or concentration yards. The add also is a means for meeting competition in highly competitive areas without disturbing the level of prices throughout most of the area. On days when there is a material change in the market trend, the board prices are usually changed accordingly.

The pricing system for direct hogs no doubt should be as flexible as that at the public markets, but some modification of the present system of the board price and the add seems desirable. The board price and the maximum range of the add could be quoted in published prices. It appears, however, that it would be less confusing and more satisfactory if the generally unpublished add were eliminated as such from the pricing practice and instead price ranges for the various classes, weights, and grades were published or otherwise announced. This is done now by some packers who buy direct. The actual range of prices would then be known to producers, dealers, and others alike, and the prices actually paid would vary within the limitations of the quoted ranges.

COMPARISON OF DIRECT MARKETS AND PUBLIC MARKETS

There are numerous contrasts between direct-buying markets and public markets. When hogs are sold direct the seller usually knows in advance the minimum or approximate prices he will receive for certain weights and grades of hogs, whereas if the hogs are consigned to public markets they will be sold at prices that are not known in advance. On the other hand, public markets receive and sell all hogs offered at some price, whereas some concentration yards are not in position to dispose readily of all hogs, and they often discourage the delivery of undesirable kinds by paying relatively low prices for such hogs. Hogs may be delivered and sold at practically all hours at

concentration yards and at interior packing plants. They may be delivered at all hours at public markets, but the trading hours at such markets are usually between 8 a. m. and 3 p. m.

AUCTION MARKETS

Livestock auction markets have been in operation many years. In earlier years they were limited largely to the sale of horses and mules. Regular auction markets for selling other livestock have been developing for some time and have increased rapidly in number in recent years in hog-producing areas. The greatest development took place in 1933 and 1934. Several hundred auction markets were in operation in the areas covered by this survey, and special attention was given to 47 representative auctions.

The present livestock auction markets include facilities ranging from a few pens enclosed with woven-wire to well-equipped stockyard pavilions with modern facilities, such as adequate sales rings, amphitheaters, and self-registering scales.

Auction markets have been developed in some areas by local civic groups for the interchange of farm products and machinery within the community and for the sale of community livestock to outside buyers. Other auction markets have developed out of former cooperative livestock shipping associations, while private interests have established auction markets as business ventures.

AUCTION-MARKET METHODS

Three distinct methods of handling livestock sales were noted among the auction markets visited. At one group no scales are used, but livestock are sold by the head. In another group the sale is by the pound, and each owner's stock is sold separately in fairly uniform lots. By this method the owner can usually protect his property by bidding it in if the prices are not satisfactory to him. In a third group of auction markets the animals of many owners may be offered together in uniform lots of truck loads or car lots and sold at so much per pound. Records are kept of the weight of each owner's hogs in each lot offered, and the owner generally abides by the price set by the highest bid and accepts his proportionate share of the proceeds of each lot. Prospective bidders have an opportunity before the sale to view the livestock and know their quality, the exact number, and the total and average weights. This method attracts many buyers of slaughter animals because they usually can get at such markets full lots of the numbers and qualities they desire.

Although some auction markets are classified as public markets under the Packers and Stockyards Act, this type of market differs in many respects from the public markets where livestock is bought and sold through commission sales agencies. Auction markets provide an easily accessible outlet for the farmer's livestock. In some areas the recent rapid expansion in the number of auction markets has tended to reduce the volume of livestock received on public markets in the sections where the auction markets are most numerous and effective.

LOCAL LIVESTOCK DEALERS

Local dealers continue to hold a strong position in the marketing of livestock in the United States and have become an important factor in the development of direct marketing during recent years. Some local dealers operate at established places where livestock is delivered by farmers in the community, but a more recent and growing practice is for the local dealer also to buy livestock at the farms in his trading area, and, utilizing his own trucks, transport the animals to his own assembly point or to the market outlet of his choice.

Local dealers handle a large volume of market hogs. In 1933 at points covered by this survey they supplied 34 percent of the hogs delivered by truck at packing plants, 14 percent at concentration yards, 11 percent at auctions, and 3 percent at public markets. They also supplied 55 percent of the hogs delivered by rail at packing plants, 79 percent at concentration yards, 34 percent at auctions, and 30 percent at public markets.

Although no exact information is available as to the proportion of the hogs which were received at public markets from local dealers prior to the rapid development of direct marketing, it is generally known that the percentage was rather high. It is apparent, therefore, that farmers continue to sell hogs in large numbers to local dealers. The local dealer, on the other hand, has shifted his outlet in a large measure from public markets to sales direct to packers, to concentration yards and, to some extent, to auctions.

LOCAL DEALERS AND DIRECT MARKETING

As a result of the growth of direct marketing the services of local dealers have not only been maintained but have been enlarged. When the local dealers sold at public markets their hogs were consigned to a commission merchant. Now local dealers who market direct do not utilize the services of a selling agent. If they operate trucks they also perform the additional function of transporting the livestock, in most cases collecting the hogs at the farm and delivering them to the packing plant, concentration yard, or public market. Since the buying of livestock from farmers and its resale is, in most instances, the principal business of local dealers, they naturally endeavor to keep well informed regarding market conditions and prices. Many have radio receiving sets installed in their offices or trucks. They receive current market information by mail and through the press, and otherwise keep in close touch with the changes in market prices and conditions. They have played a considerable part in the development of direct marketing of livestock since they, rather than the farmers, are largely instrumental in the direct movement of hogs to packers and concentration yards.

DOCKING

One of the practices followed at public markets and in direct buying is that of docking or deducting specified amounts from the actual weights of stags or piggy sows. The purpose of docking is to provide allowance for additional wastage, due to the condition of the animal and to compensate in part for its probable inferior quality. This dockage amounts to as much as 70 or 80 pounds for stags and 40

pounds for piggy sows, except that light sows may be docked only 20 pounds at some markets. The practice arose during the period when hogs were sold mixed or with little sorting for classes, weights, and qualities. The docking at public markets usually is performed by an official docker provided by the exchange. A fee is charged the seller and is included with other marketing charges. At direct-buying points the docking is performed by the buyer, but no charge is made for it.

In addition to the question of whether the arbitrary amounts deducted from the weights of stags and piggy sows is fair, it is apparent that all pregnant sows are not docked. Packers' records show that a great many more such sows are slaughtered than are actually docked. This practice does not extend to pregnant cows and ewes, which instead are sold according to condition and relative quality. Since stags and most sows usually are sorted out from other hogs and sold as such, it would require no greater effort under present conditions, either at public markets or at direct-buying points, to sell them also according to their class, condition, and quality, at actual weights.

SCALES AND WEIGHING

Commercial hogs are sold by weight at all types of markets except at a few auctions. Each type of market generally follows a definite practice in weighing hogs. With but few exceptions employees of the stockyard company weigh the hogs sold at public markets. The auction company generally furnishes this service at auction markets. The packers and concentration-yard operators usually weigh all hogs bought direct by them on their own or leased scales or on scales owned by the railroad on which the concentration yard is located.

No charge is made for weighing services by packers and concentration-yard operators. There usually is no specific charge for weighing at public markets, but it is included in the service charges rendered by the stockyard company against the livestock. The scales at public markets and of packers who buy direct are under the supervision of the Packers and Stockyards Administration. Those at other buying points usually are under State or city supervision.

At most direct-buying points surveyed only one scale is used for weighing all livestock. The capacities of these scales range from 3,500 pounds to 40,000 pounds. It was found in this survey that only one scale is maintained at each of 80 percent of the concentration yards visited, at 61 percent of the packing plants, and at 55 percent of the auctions surveyed. The weighing service would be improved by more frequent inspection of the physical condition of the scales. The installation of small scales for small lots of hogs is also desirable, for exact weights cannot be obtained on individual hogs weighed over large stock scales weighing to 10-pound units.

The few farmers who have scales use them so seldom that they are not certain of their accuracy. Few producers check weights at municipal or cooperative scales, which they could do at a large proportion of the markets. Public or semi-public scales owned by the municipality or by cooperative associations were conveniently accessible to 84 percent of the concentration yards and assembly points covered in this study, 76 percent of the packing plants not located at public

markets, and 67 percent of the auctions where hogs were sold by weight. The usual charge for the use of such scales was 10 cents per draft.

FARMERS' OPINIONS REGARDING WEIGHING

Farmers were asked by questionnaire if the weighing practices and results of the various types of markets were satisfactory to them. The replies from 7,095 are shown in table 20. For all farmers who reported on the question, 94.7 percent stated that weighing was satisfactory at public stockyards, 3.7 percent reported it unsatisfactory, and 1.6 percent stated that they were uncertain. For the other types of markets the proportions of the farmers who reported weighing satisfactory ranged from 83.6 percent for concentration yards and buying stations to 89.0 percent for local livestock buyers.

TABLE 20.—*Farmers reporting weighing as satisfactory or not satisfactory at various types of markets, 1934*

	Satisfactory		Not satisfactory		Uncertain	
	<i>Number</i>	<i>Percent</i>	<i>Number</i>	<i>Percent</i>	<i>Number</i>	<i>Percent</i>
Public stockyards.....	3,845	94.7	150	3.7	64	1.6
Packing plants.....	1,585	87.6	184	10.2	40	2.2
Concentration yards and buying stations.....	697	83.6	117	14.0	20	2.4
Local livestock buyers.....	2,297	89.0	225	8.7	60	2.3
Auctions.....	418	86.0	59	12.1	9	1.9

A large number of farmers and truckers who sold hogs direct to packers and concentration yards were interviewed by field representatives relative to weighing practices. No specific complaints of current irregularities were reported.

It is recognized that disinterested weighing tends to reduce the criticism of the weighing that is under the control of the buyer. Where a sufficient volume of livestock is handled to occupy the time of the weighmaster fully, little additional expense to the industry would be involved in replacing the employee of the buyer with a disinterested weigher. Where the volume of business would not warrant a full-time weigher, the employment of an independent weigher would add to the cost of marketing.

TYPES OF MARKETS USED BY FARMERS

An effort was made by questionnaire to measure the extent to which farmers use the different types of markets. The number and percentage of hogs sold at the various types of markets in each of the 2 years 1932 and 1933 are shown in table 21, which is based on reports from 9,497 farmers who sold 603,674 hogs in 1932 and 9,881 farmers who sold 629,173 hogs in 1933. Of the total hogs reported, the largest proportion was sold at public markets, amounting to slightly less than 45 percent in each of the 2 years. About 22 percent were sold to local buyers, and about the same proportion were sold to packers and operators of concentration yards and other direct-buying stations combined. The proportion of hogs sold each year by the different methods varied only slightly.

TABLE 21.—*Hogs sold by farmers*¹ *at various types of markets in 15 States, 1932 and 1933*

Type of market	1932		1933	
	Number	Percent	Number	Percent
Public stockyards.....	269, 739	44. 7	281, 978	44. 8
Packing plants.....	83, 702	13. 9	87, 871	14. 0
Concentration yards and buying stations.....	36, 066	6. 0	39, 035	6. 2
Local buyers.....	133, 258	22. 0	137, 391	21. 8
Auctions.....	13, 638	2. 3	16, 526	2. 6
Cooperative shipping associations.....	67, 241	11. 1	66, 372	10. 6
Total.....	603, 674	100. 0	629, 173	100. 0

¹ Based on 9,497 reports for 1932 and 9,881 reports for 1933. The number of hogs sold in each of these years averaged slightly more than 64 per farmer reporting.

Information could not be obtained from the questionnaire sent to producers as to what proportion of the hogs which farmers sold to local dealers and marketed through cooperative livestock shipping associations was in turn sold at public markets, and what proportion was sold by these agencies direct to packers or to concentration yards. However, information obtained on questionnaires from packers who buy hogs direct and from concentration yards throws some light on this question. Sixty-six packing plants and eighty-nine concentration yards which reported their source of purchase for 1933 obtained a total of 10,491,000 hogs from cooperative livestock shipping associations, local dealers, and truckers who bought hogs from farmers. This represents 50.7 percent of the 20,707,000 hogs which were reported by packers under Federal inspection as being purchased direct during that year. It is evident, therefore, that a large proportion of the hogs sold by farmers to local dealers and through cooperative livestock shipping associations are in turn sold direct to packers or to concentration yards.

REASONS FOR MARKET PREFERENCES

The market outlets which farmers said were the most convenient were local dealers, packing plants, and concentration yards, in the order named. The greater convenience, as stated by many, was that hogs could be moved to such markets by truck. A substantial number selling to local dealers at concentration yards and at packing plants reported that they did so because they knew the price in advance. Less shrinkage was given by a substantial proportion as the reason for selling at concentration yards, packing plants, auctions, and to local dealers. Other reasons given by many for selling hogs at other than public markets were that small lots sold more advantageously, that better service was obtained, and that control of sales and prices was possible. Some preferred auctions, because auctions provide a better market for feeders, and a considerable number favored cooperative livestock shipping associations because they liked the cooperative principle. Of those who favored public markets, 4 percent gave their own opposition to direct marketing as a reason for this preference.

THE PACKERS AND STOCKYARDS ACT AND DIRECT MARKETING

The Packers and Stockyards Act of 1921, with amendments, is designed primarily to regulate interstate and foreign commerce in livestock and livestock products. It is administered by the Bureau of Animal Industry under the Packers and Stockyards Act. The market practices of all meat packers engaged in interstate and foreign trade in meats, and all public livestock markets with an area in excess of 20,000 square feet exclusive of runs, alleys, and passageways, where livestock are held or kept for sale or shipment in commerce, are subject to the provisions of this act. The extent to which the provisions of this act affect the marketing of hogs direct to packers and others, as well as at public markets, is briefly outlined in a statement submitted by the Bureau of Animal Industry. This statement appears in the Appendix.

CHAPTER 6

GRADE STANDARDS AND MARKET NEWS

VARIATIONS IN CLASSIFICATIONS OF HOGS

Variations in the weight and quality of live hogs determine to a large extent the differences in the yield and quality of the finished product, even under a high standard of processing technic. Out of these variations arises the need for the classification and grading of hogs, under which producers might be paid for hogs according to differences in dressing percentage and in quality of hog products. Apparently, in adjusting their practices to this need each public market, local trading agency, meat-packing company, and market-news agency, adopted classifications with grade nomenclatures and interpretations peculiar to itself. As a result numerous local classifications exist that are lacking in comparability.

USE OF CLASSIFICATION

Local classifications ¹⁵ are used by the trade when referring to the various market groups of hogs and by local market news agencies when describing market conditions and quoting prices. In actual practice, however, public-market agencies sort when necessary for the best display of the hogs offered for sale, and grade only when required to by the purchasers. They claim that hog receipts at public markets generally are too large to permit strict sorting and grading in the time available between their arrival and sale; that at present the stockyards are not equipped to facilitate close sorting and grading; that unnecessary shrinkage in live weight results from the extra movements of the animals when they are being sorted and graded into the various market groups; and that the farmer or shipper would not receive more for his hogs if they were sorted and graded than he generally receives when all are sold in one lot. At direct-buying points and especially at concentration yards, however, hogs usually are sorted and graded and prices are paid according to the various sorts and grades.

LACK OF COMPARABILITY AMONG CLASSIFICATIONS

Because of the apparent differences in the practices with respect to sorting and grading at public markets and at direct-buying points, special attention was given to prevailing classifications in connection with the efforts to determine the effect of direct marketing on the quality of hogs at public markets. It was found that a total of 72 different systems of classifications are in use at 204 public markets, auctions, and direct-buying points. These are shown in the Appendix. Of these, 20 public markets use 10 different systems of classifications, 39 auctions use 11, 55 packing plants use 25, and 90 concentration yards use 26 classifications. Among the terms used by different groups to designate the equivalent of U. S. Choice grade barrows

¹⁵ For the purpose of this discussion, "classification", as applied to market hogs, means a schedule of market terms used to designate the various distinct market groups or kinds, weights, classes, and grades into which slaughter hogs may be sorted for sale according to their relative market values.

and gilts are Prime, Prime hogs, Prime Butchers, Butchers, Butcher hogs, Good Butchers, Good to Choice, Choice to Prime, Choice, Good hogs, Top hogs, Good Heavies, Smooth hogs, Heavy, Medium or Light Butchers, Good Heavy, Good Medium or Good Light Butchers, Fat hogs, Good Fat hogs, Finished, Well Finished, Highly Finished, No. 1's, Yorkers, Californias, Better Grade Lights, Mediums, or Heavies, etc. The terms used to designate the other quality, class, and weight groups are equally confusing. For instance, the term "Heavy" refers to a hog weighing from 250 pounds up, at one market, but refers to one weighing from 200 pounds up at another. Hogs weighing 190 to 210 pounds are called Heavy Yorkers at another market.

Although classifications that appear similar are in use at some markets, variations in their actual application are general, and many changes are made in them at irregular intervals during the year. Not only are different terms used to designate the same weights and qualities of hogs, but the same terms often are used to designate different market groups at different markets and even on the same market. Some buyers both on public markets and at direct-buying points use only 2 or 3 segregations, whereas others use as many as 20.

Although some uniformity in classification practices has been attained during recent years the marketing of hogs in the United States is severely handicapped because many markets and market groups continue to adhere to numerous and variable systems of classifying and grading hogs. Even those markets and buying points that have comparable classifications, including those that base their classifications on the Federal standards, use so many variations in their applications that often comparability is apparent only to close students of those markets.

BASIS FOR SINGLE SET OF STANDARDS FOR HOGS

In an effort to provide a standard classification for market hogs that would meet the needs of the industry, grade standards, especially for barrows and gilts, were agreed upon by representatives of meat packers, livestock producers, and the Bureau of Agricultural Economics, in 1931. These standards have been used consistently by the Federal Market News Service at all markets where the service is maintained and in the direct-marketing areas in Iowa and southern Minnesota. Some packers use these standards with modifications in their purchase of hogs direct and at some public markets.

Replies to a questionnaire sent to the various marketing agencies that buy or sell hogs indicate that the Federal standards are now used with varying modifications by at least 62 of them. Those that stated that they are now using these standards as a basis for classifying hogs in trading and to some extent in posting or publishing prices include 5 public markets, 13 packing plants representing 5 different packing companies, 16 concentration yards operated by 3 different packing companies, 21 other concentration yards and assembly points, and 7 auction markets.

FARMERS' OPINIONS REGARDING SORTING AND GRADING OF HOGS

Farmers were asked whether they found the sorting and grading of hogs satisfactory when they sold at public markets, to packing plants, at concentration yards, to local livestock dealers, and at auctions.

Cooperative shipping associations were not included in this list of market outlets because they were assumed to be the selling agent for the farmer although in many cases such associations are actually buying the hogs from the farmers. Replies from the 7,745 farmers who answered this question were tabulated as "satisfactory", "unsatisfactory", and "uncertain", and are presented in summary form in table 22. Sorting and grading at public markets were reported satisfactory by 87.8 percent of the farmers who replied to this question. The proportion of farmers who reported sorting and grading as satisfactory at other market outlets was 82.3 percent for local livestock dealers, 80.6 percent for auctions, 71.1 percent for packing plants, and 61.3 percent for concentration yards.

TABLE 22.—*Farmers who reported sorting and grading of hogs as satisfactory or not satisfactory at each of various types of markets, 1934*

Type of market	Satisfactory		Not satisfactory		Uncertain	
	Number	Percent	Number	Percent	Number	Percent
Public stockyards.....	3,802	87.8	411	9.5	116	2.7
Packing plants.....	1,448	71.1	506	24.9	81	4.0
Concentration yards and buying stations.....	591	61.3	340	35.3	33	3.4
Local livestock buyers.....	2,327	82.3	426	15.1	73	2.6
Auctions.....	490	80.6	105	17.3	13	2.1

METHODS AND FREQUENCY OF OBTAINING LIVESTOCK MARKET INFORMATION

Replies to questionnaires sent to farmers in 15 States requesting them to list the various means by which livestock market information is received show that current and periodical information is available to farmers through the radio, daily mail, daily reports, cards from commercial interests, daily papers, weekly papers, telephone, truckers and local dealers, and others. Since many farmers had more than one means of obtaining market information, the total number of sources of information listed is nearly double the number (11,348) of farmers that reported. The distribution of the number and percentage of reports by farmers in all the 15 States is shown in table 23. Of the 11,348 farmers who reported on this question, 83.7 percent obtained market information through daily papers, and 55.6 percent by radio. The most important among the other methods of receiving information was by telephone, which was reported by 15.1 percent of the farmers.

TABLE 23.—*Means of obtaining price quotations and other market information as reported by 11,348 farmers producing hogs, 1934*

Means of obtaining information	Farmers reporting ¹	Percentage of farmers reporting the specified means ²	Means of obtaining information	Farmers reporting ¹	Percentage of farmers reporting the specified means ²
	Number	Percent		Number	Percent
Radio.....	6,306	55.6	Weekly mail report.....	824	7.3
Daily paper.....	9,493	83.7	Telephone.....	1,713	15.1
Weekly paper.....	898	7.9	Trucker.....	1,065	9.4
Daily mail report.....	1,030	9.1	Other.....	599	5.3

¹ Some farmers specified 2 or more of the means of obtaining information.

² The total number of farmers (11,348) is the base for computing each percentage.

The radio is the quickest means by which livestock market information is disseminated. Information concerning the general condition of the market, the receipts, and more or less detailed price quotations is broadcast one or more times each day from the important livestock markets, and from a large number of the less important markets. This permits farmers to compare prices at the different markets and in many instances, following the broadcast, they are in position to make deliveries the same day to the market which appears to be the most advantageous.

Next to the radio, the telephone is the quickest means of obtaining market information. One-fourth of the Iowa farmers who reported stated that they obtained information of the livestock markets by telephone, which was a larger proportion than in any other State. It is a common practice among a considerable number of farmers in the Corn Belt who have hogs to sell to obtain price quotations over the telephone from available direct outlets, and very often sales are made over the telephone.

The dissemination of market information by truckers and local dealers is important in many communities. Truckers and local dealers receive information about livestock markets by telegraph or telephone or by radio, receiving sets being installed in some of their trucks. Truckers and local dealers usually disseminate such information when calling farmers by telephone to solicit business and quote prices.

Daily papers represent the most common means of obtaining information by farmers. Some farmers reported the daily paper as the only source of information about the markets, whereas others gave it as one of several sources used. Market reports in many daily papers are usually rather complete and often cover a number of markets that are important in the particular area. Daily papers, however, usually serve to supply information of the markets for the day previous, or if they contain information on the day's market it is usually received too late to be of much help as a guide to selling on that day.

About 9 percent of the farmers reported that market information was received by daily mail reports. These reports are sent out daily by some packers and by some concentration-yard managers who buy direct. Some are sent by commission men at public markets, and some by the Federal Market News Service. Weekly mail reports and livestock reports in weekly papers primarily furnish information relative to the trend of receipts and prices at certain markets. Methods of obtaining market information reported under "other" included reports from local buying agencies, local cooperative livestock shipping associations, local farm bureaus, agricultural experiment stations, State departments of markets, and neighbors.

Livestock market information is available by various methods to many farmers from a variety of markets. The number and variety of markets on which farmers receive such information was recorded in the questionnaire. An analysis of the replies shows that although some farmers keep in touch with several markets, each of the 9,411 farmers who replied to this question had access, on an average, to market information from approximately two different markets. The markets listed by farmers are arranged in table 24 in three groups: Public markets where the Federal Market News Service is maintained, all other public markets, and private markets.

TABLE 24.—*Type of markets¹ from which livestock-market information was obtained by farmers, by States and areas, 1934*

Area and State	Farmers reporting	Livestock information reports received from—						
		Larger public markets ²		Smaller public markets		Private markets		Total ²
	Number	Number	Percent	Number	Percent	Number	Percent	Number
Eastern Corn Belt:								
Wisconsin.....	552	553	59.4	271	29.1	107	11.5	931
Michigan.....	349	284	41.4	343	50.1	58	8.5	685
Illinois.....	1,234	1,647	83.5	221	11.2	104	5.3	1,972
Indiana.....	993	1,582	81.2	212	10.9	155	7.9	1,949
Ohio.....	874	1,517	81.1	104	5.5	250	13.4	1,871
Total.....	4,002	5,583	75.4	1,151	15.5	675	9.1	7,408
Northwestern Corn Belt:								
North Dakota.....	224	327	84.3	3	0.8	58	14.9	388
South Dakota.....	346	527	69.8	146	19.3	82	10.9	755
Minnesota.....	525	682	85.6	10	1.3	104	13.1	796
Iowa.....	1,144	1,726	76.8	35	1.5	487	21.7	2,248
Nebraska.....	628	1,152	96.6	6	0.5	34	2.9	1,192
Total.....	2,867	4,414	82.1	200	3.7	765	14.2	5,379
Southwestern Corn Belt:								
Kansas.....	722	1,163	87.5	34	2.6	132	9.9	1,329
Missouri.....	969	1,794	96.7	28	1.5	33	1.8	1,855
Total.....	1,691	2,957	92.9	62	1.9	165	5.2	3,184
Outside Corn Belt:								
Oklahoma.....	309	328	55.5	202	34.2	61	10.3	591
Kentucky.....	267	393	74.6	110	20.9	24	4.5	527
Tennessee.....	275	220	44.7	245	49.8	27	5.5	492
Total.....	851	941	58.4	557	34.6	112	7.0	1,610
Total, 15 States.....	9,411	13,895	79.0	1,970	11.2	1,716	9.8	17,581

¹ Larger public markets include those where Federal Market News Service is maintained. Smaller public markets are those where Federal Market News Service is not maintained. Private markets are those not posted by the Packer and Stockyards Administration.

² Some farmers reported receiving livestock market information from 2 or more markets.

The frequency with which market information can be obtained depends upon means of obtaining it. A farmer who is provided with radio or telephone or who receives a daily paper or daily mail report can obtain such information every day if he so desires. Of the farmers who reported that they receive market information by radio, 92 percent said that such reports were received daily. Of those who received market information by telephone, 24 percent stated that they received this information daily. Many farmers get market information during periods when they have livestock ready for market but not otherwise. However, the fact that information may be had whenever it is needed has improved the farmer's position in marketing, and has contributed considerably to the convenience and practicability of marketing livestock direct. The interpretability and value of the available market information, however, would be much greater if the price information were based on a single standard classification for the classes, weights, and grades.

DESIRABILITY OF COMPARABLE CLASSIFICATIONS

Reliable, timely, and easily interpretable market information is necessary in the intelligent marketing of any commodity. Because of the wide distribution of livestock and of livestock markets, and because of the wide ranges in the actual values of, and consequently

in prices paid for, the various classes, grades, and weights of each kind of livestock, the broad serviceability of market information depends to a very large degree upon the comparability of the classifications used and the uniformity with which the class and grade nomenclatures are applied. In this respect the marketing of hogs both direct and at public markets is severely handicapped because of the wide variations in the hog classifications used throughout the country. (Seventy-two different systems were noted in the survey.) The varying and often the provincial character of existing local hog classifications inevitably leads to confusion and misinterpretation of the market information based on them. Their effectiveness is often restricted to the local trade territory of the market concerned despite the fact that a much broader interest in that market exists. Since essential details regarding prices at different markets are obscured by unfamiliar or dissimilar classifications and nomenclature, not only are producers and shippers confused, but many market agencies are not fully informed regarding conditions of competing markets and the general price levels for the animals they undertake to sell and buy.

The prices paid for hogs—whether sold direct or at public market—are based on broad economic conditions that determine the level of hog prices. Constantly changing local supply and demand conditions, however, often cause daily and, at times, hourly shifts in prices at one market which are at variance with the price fluctuations being currently registered at another. Accordingly, although over a reasonable period price trends at different markets are similar, as shown elsewhere in this report, there are no fixed price differentials between markets. It logically follows that accurate comparisons of prices prevailing at different markets are possible only to the extent that market information is available, based on uniformly applied standard classifications.

STANDARDIZED MARKET INFORMATION AS AN AID IN MARKETING

To be of greatest usefulness, market information should be based on standard classifications and should portray livestock-market conditions at important public markets and in direct-marketing areas and meat-trade conditions at the leading consuming centers which reflect strength of consumer demand. The Federal Market News Service is based on this principle. It reflects livestock-market conditions at 25 public markets and in the direct-marketing areas of Iowa and southern Minnesota and the conditions in the meat trade at five major meat-consuming centers. For this purpose a single set of standards is used for each distinct commodity. The standards are applied uniformly at all markets and thus provide bases for broad comparisons of market conditions and prices. Although prompt and widespread dissemination of the Federal market information is accomplished by all available means of communication and distribution, including the radio, telegraph, telephone, the press, and the mail in an effort to serve the greatest possible number, often its greatest usefulness to producers, shippers, and market agencies is reduced by the simultaneous dissemination of local market information based only on local classifications.

Undoubtedly the livestock market news service rendered by the trade and commercial news-disseminating agencies would be of greater usefulness and value to producers and to trade interests who use such service if the information disseminated were based on a single set of grade standards for each kind of livestock rather than on many local grade classifications.

FEDERAL MARKET NEWS IN DIRECT-MARKETING AREAS

The value of the Federal Market News Service in the direct-marketing areas and to producers generally lies in its ability to supply producers and trade interests in a timely and dependable manner with unbiased information based on uniform weight and grade standards, regarding prevailing supplies, market conditions, and prices on hogs sold direct to packers and at concentration yards as compared with supplies, trade conditions, and prices at public markets.

Through an office located at Des Moines, Iowa, the Federal livestock market news service compiles and releases daily and weekly reports which summarize the composite conditions with respect to supply, demand, and price (by weights and grades) for hogs bought direct at 22 important concentration yards and at 7 packing plants located in interior Iowa and southern Minnesota. (See sample form in appendix.) The information is obtained largely through daily communications by telegraph and telephone with the different buying stations within the area covered and is checked by such personal contacts with buyers and sellers as the two reporters assigned to the work can make in the time available.

Under normal market conditions, basic prices paid for hogs of a given weight and grade do not vary greatly throughout the area covered by the service. At times unusual conditions arise with respect to the supply and demand which result in wide variations in the prices paid. At such times some increase in the market-reporting personnel in this direct-marketing area would insure a more accurate portrayal of the market than can be made with the present small staff.

Producers in other areas, especially the other parts of Iowa, and sections of Illinois, Missouri, Minnesota, Indiana, and Ohio, in which the direct marketing of hogs has attained large dimensions, would be in a much more favorable marketing position than they are at present if a service similar to that conducted in interior Iowa and southern Minnesota were extended to those areas.

CHAPTER 7

FACTORS AFFECTING HOG PRICES

Changes in marketing methods would affect hog producers most seriously if such changes should cause the level of hog prices to be lower than that which would otherwise prevail. Hence, in appraising the effects of the growth of direct marketing and other changes in marketing methods upon the hog industry and upon hog producers, it is of primary importance to determine the influence, if any, of such changes upon the level of hog prices. The importance of this problem is emphasized by the fact that during the period since 1925, when the direct marketing of hogs has been expanding greatly, hog prices have declined from a relatively high level to a very low level. In 1926 the price of hogs at Chicago averaged about \$12 per 100 pounds, the highest level on record except for the years of the World War. From 1930 to 1932, however, prices declined very sharply, dropping to about \$3 at Chicago late in 1932, the lowest level on record for that market in the present century at least. Since the marked decline in hog prices from 1926 to 1932 was accompanied by a material increase in direct marketing, questions frequently arise concerning the causal relationship between the two.

To determine what effect, if any, the increase in direct marketing has had upon the level of hog prices, an analysis of the relative importance of the several factors affecting hog prices in the last 25 years has been made. This analysis is primarily concerned with the factors affecting retail prices of hog products and the relationship of retail prices and wholesale prices of hog products to hog prices. In making the study attention was given chiefly to the year-to-year variations in prices or the changes in the level of prices rather than to minor changes from week-to-week and from month-to-month within a given year.

IMPORTANT CHARACTERISTICS OF THE MARKET FOR HOGS AND HOG PRODUCTS

Certain characteristics of supply and demand conditions as they relate to hogs and hog products cause the hog-price mechanism to operate somewhat differently from the price mechanism of many other commodities. These are: (1) The seasonal nature of hog production and marketing, which results in slaughter supplies of hogs being relatively large in certain seasons and small in others; (2) the relatively uniform consumption of hog products throughout the year, notwithstanding the wide seasonal variations in slaughter; (3) the perishability of hog products, which imposes certain limits on storage operations; and (4) the risk factor which must be assumed by those engaged in the processing and storing of hog products.

In addition to these factors which cause the determination of hog prices to be a complicated process, the markets for hogs and the important consuming centers for surplus hog products are in most

instances widely separated, as in the case of many other farm products. Consequently, the relation between prices of hogs and prices of hog products frequently is not clearly understood. But to determine the factors affecting hog prices it is essential that this relationship be defined.

HOW HOG PRICES ARE DETERMINED

Elsewhere in this section it is shown that changes in the aggregate retail value of hog products are determined by changes in incomes of consumers. The total retail value of hog products for any given period, obviously, is determined by the amount of incomes of consumers for the period and the proportion of such incomes expended for hog products. This proportion is affected by the competition of other commodities with hog products for the consumers' income. In general, since pork and lard are fairly stable elements in the human diet, the proportion of incomes of consumers which is expended for these products does not change greatly from year to year, especially if incomes do not change materially.

In the last 25 years changes in the total retail value of hog products consumed usually have been in the same direction as have changes in incomes of consumers, although in some years the relative changes in the two have differed somewhat. In this period, however, the proportion of incomes represented by consumer expenditures for hog products has shown no definite tendency to increase or decrease. There is some evidence to indicate that when the level of incomes is relatively high the proportion tends to decrease, whereas when the level of incomes is relatively low the proportion tends to increase. In the years since 1910, for which data on both retail prices and consumption of hog products are available, changes in the aggregate retail value of hog products consumed apparently have not been affected by changes in the quantity of such products consumed. Hence the proportion of the total income of consumers which is expended for hog products is not related to the production, marketing, and processing of hogs.

The retail price of hog products for any given period represents the total retail value of hog products consumed during the period divided by the quantity of such products. Retailers tend to sell hog products for the highest price that can be obtained and yet permit the entire available supply to be moved into consumption. It is this retail price per unit, minus certain charges per unit for operation and overhead or the retailer's margin ¹⁶ which determines the upper limit of the price which retailers can pay packers or wholesalers for hog products. Over a period as long as a marketing season, or longer, competition among the retailers generally causes the actual price they pay to be approximately equal to the upper limit above described.

The price which the packer receives from the retailer for hog products, minus certain charges per unit for operation and overhead, also determines the upper limit of the price which packers can pay for hogs. Competition among packers for hogs usually results in the upper limit of prices being paid. It will be shown in a later section of this chapter that changes in the packers' margin ¹⁷ or spread are determined to a considerable extent by changes in the levels of wages,

¹⁶ The retailer's margin mentioned here and elsewhere in this report refers to costs of operation and overhead plus profits made by retailers.

¹⁷ The packer's margin mentioned here and elsewhere in this report includes charges for operation and overhead made by processors plus profits of such processors.

rents, freight rates, etc. These items are largely beyond the control of the individual processor.

The physical operation of the hog industry is from producer to packer and thence to the retailer and consumer, but the price-determining factors do not operate in this direction. If the price which packers pay for hogs were to be determined independently of prices of hog products, and if to this price for hogs, charges for processing were added in order to determine the price which would be paid to packers by retailers, and if retailers in turn were to add certain charges to determine prices to consumers, changes in prices of hog products would occur infrequently, since under such an arrangement packers would buy hogs only in such quantities as the products thereof could be moved into consumption at prices in line with the fixed prices for hogs.

Actually, however, packers have no control over the volume of hogs produced or the rate of hog marketings within a given year or season. It is their practice to take all hogs offered for sale, and the resulting supplies of hog products must be moved into consumption within a relatively short period because of their perishable nature. The monthly rate of consumption of hog products within a given year is fairly constant, and the total consumption and exports for any year usually are about equal to the total products of hogs slaughtered in that year. This situation is considerably different from that in many other industries, in which products are processed or manufactured only in such quantities as can be sold at a price that does not change greatly.

If prices of hog products on wholesale and retail markets were to be determined on the basis of prices of hogs as indicated in the preceding paragraph, 1 of 3 developments might occur during any given year or period: (1) All of the hog products available might be moved into consumption, but large numbers of consumers might not receive all of the hog products they would take at such prices; (2) at the price so determined it might not be possible to move all of the hog products into consumption; or (3) all of the hog products available might be moved into consumption with practically all consumers who desired hog products at the price above indicated being able to obtain the desired quantity.

The occurrence of the first situation is highly improbable, for if retailers should find that, during any given period, the quantity of hog products offered is insufficient to meet requirements of consumers, they would attempt to buy more products, and this would tend to raise wholesale prices of hog products. Likewise, packers finding that supplies of hogs offered at the fixed price were less than those needed to supply retailers with hog products would tend to raise hog prices in an effort to obtain more hogs. But any such increase in wholesale prices or in hog prices would be contrary to the operation of the price-making forces, that is, from the producer to the packer to the consumer.

The second situation is also improbable, since in this case the prices asked for hog products from consumers by retailers would be too high to permit the movement of available supplies into consumption, and this would result in an accumulation of hog products in the hands of packers. In view of the perishability of hog products the only way in which such an accumulation could be moved into consumption would be to lower prices in wholesale and retail markets. With wholesale and

retail prices declining, packers could not continue for any considerable period to pay the fixed price for hogs as assumed. Hence under such a situation a system of price-making operating from producer to the packer and to the consumer would fail completely.

The occurrence of the third situation would be to a considerable extent a matter of chance, if hog prices were determined independently of hog-product prices, since it would involve fixing the price of hogs and thereby the price of hog products at the highest level which consumers would pay and at the same time not result in an undue accumulation of hog products. This might be accomplished if it were possible to forecast accurately the volume of hog supplies to be marketed, the incomes of consumers, and likewise the price of hog products which consumers would pay in a given period. But even if such forecasts were accurate, the determination of hog prices in this manner would not be independent of prices of hog products, as was originally assumed. Ordinarily packers do attempt to forecast the volume of hogs to be marketed within a marketing season, and to some extent to forecast consumer buying power within the season; and the price they pay for hogs currently is influenced to some extent by their opinion of the future course of hog-product prices; but the average hog price for an entire season or year is closely related to the price of hog products within that season or year.

CONDITIONS OF SUPPLY AND DEMAND FOR HOGS AND HOG PRODUCTS

The immediate demand for hogs is found in the hog markets where the buyers and the sellers meet. This demand is for a raw material to be processed, the various products going by different stages to the actual consumers. The ultimate demand for hogs, then, is the demand of consumers for the products of hog slaughter. The actual meeting place of this consumer demand and the supply, which is chiefly pork and lard, is at the retail counter or at hotel and restaurant tables. The effective or organized meeting places are in the wholesale meat and provision markets of all kinds where sales are made to retailers and to buyers for many hotels and restaurants.

The demand for hog products is not entirely domestic in character as the preceding paragraph would indicate, even though at present more than 90 percent of the total United States production of hog products is domestically consumed. The export trade is still a factor of importance to the hog industry, especially in the case of lard, although exports of hog products have declined greatly during the last decade. The foreign demand for hog products is reflected in the hog market in much the same way as is the domestic demand. However, the foreign outlet for hog products is affected by numerous factors that do not affect domestic demand, such as hog production in other producing countries, consumer purchasing power abroad, and import restrictions of various types.¹⁸

The supply of hogs marketed during a given year in every case represents the approximate supply produced and not the quantity of hog products that can be moved at a particular price. The perishability of hogs and hog products, together with the risk involved in

¹⁸ Detailed consideration of the factors affecting the export outlet for hog products has not been included in this report, since changes in foreign demand for United States hog products are not related to the changes in methods of marketing hogs in this country. Information concerning the export outlet for hog products is given in the following: THORNE, G. B., and RICHARDS, P.: FACTORS AFFECTING UNITED STATES EXPORTS OF HOG PRODUCTS, U. S. Dept. Agr., Bur. Agr. Econ., 51 pp., illus., 1932 [mimeographed]; and in World Trade Barriers in Relation to American Agriculture (12).

storage operations, makes only limited holdings possible. The hog crop produced in a given year must be marketed largely within a period of 12 months, and the stock of hog products accumulated in a particular storage season must also be moved into domestic consumption or export channels before the next storage season begins.

Hog production is highly seasonal in character. This is due to the fact that about two-thirds of the yearly production of pigs are farrowed in the spring (before June 1) with most of the remainder being farrowed in the fall. These seasonal characteristics are reflected in the movement of hogs to market since hogs usually are ready for slaughter within 6 to 10 months after they are farrowed, especially those produced in the surplus area. The hog-crop marketing year, therefore, does not coincide with the calendar year. It is probable that September 15 most nearly represents the date of the beginning of the shift from an old-crop to a new-crop basis, but as it is an inconvenient date from the standpoint of keeping records, and as the September supply includes more old-crop hogs than new-crop hogs, October 1 is more commonly accepted as the date on which the new marketing year begins.

The marketing period for the spring-pig crop extends largely from mid-September of the year in which the pigs are farrowed through April of the following year. Federally inspected slaughter during the 7 months, October to April, inclusive, normally represents about 64 percent of the yearly total. The fall-pig crop is marketed from late March to some time in October in the year following the season in which the pigs were farrowed. However, the bulk of the fall crop moves to market from May to September, inclusive, and inspected slaughter during these 5 months represents about 36 percent of the 12-month total.

As a result of the seasonal changes in both numbers and weights of hogs slaughtered, about 63 percent of the yearly commercial production of hog products is derived from the hogs slaughtered from October to April, inclusive. Domestic consumption during this 7-month period, however, represents only 58 percent, or seven-twelfths, of the yearly consumption. It is during this period, therefore, that hog products are accumulated to furnish needed supplies during the season when supplies of slaughter hogs are relatively scarce, that is, the summer and early fall. Most of this accumulation usually occurs during the 4 months, November to February, inclusive.

The greater part of a hog carcass goes into processed products, the parts ordinarily sold as fresh meat constituting about 35 percent of the total edible products. Although processed products can be held in storage for a considerable period without deterioration in quality, and large quantities of fresh pork are frozen and carried from winter to the spring and summer, then to be processed and sold or sold unprocessed, the cost of carrying products in storage and the financial risk involved in carrying them into or through another period of accumulation make it imperative that stocks be moved into consumption within a few months after they are produced. It should be kept in mind that a very large part of the products that are reported at any one time as storage holdings actually represent products that are being processed and which, therefore, are not yet ready for movement into consumption.

Storage operations introduce a large element of risk in hog packing which is not existent in cattle and sheep slaughter, since practically all the beef and lamb and mutton are sold as fresh meat and go into immediate consumption. Risk enters into the pork business also by reason of the fact that the processing of hog products, regardless of surplus storage accumulation, takes considerable time. The packer's yearly profit in his hog-slaughter operations is involved to a considerable extent in the risk of carrying surplus hog products from winter to summer. Hence a comparatively low level of hog prices in the winter, together with a high level of product prices in the summer, is the most desired situation from his standpoint. Usually the rise in prices of hog products from winter to summer is about sufficient to make storage operations fairly profitable.

Although numerous steps and processes, and varying periods intervene between the sale of hogs by producers and the purchase of hog

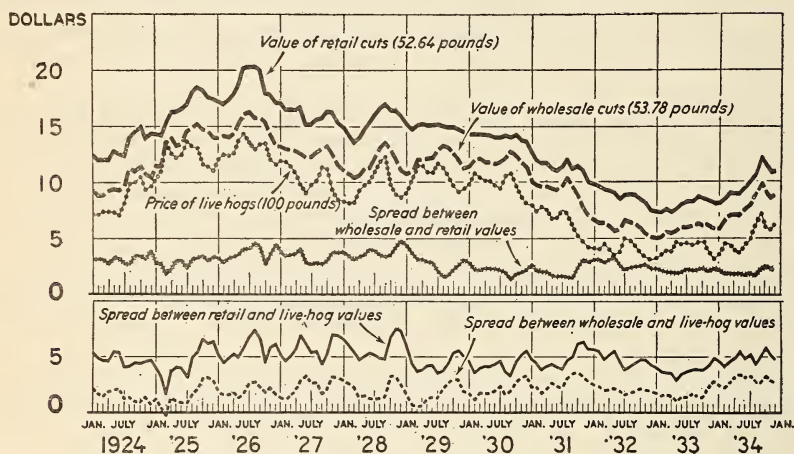


FIGURE 17.—HOG PRICES, WHOLESALE AND RETAIL VALUES OF HOG PRODUCTS AND SPREADS BETWEEN VALUES, 1924-34.

The changes in hog prices at Chicago correspond closely with the changes in retail and wholesale values of the principal hog products obtained from 100 pounds of hog at New York. The spreads between prices and values shown in the lower section of this figure largely represent costs of processing and distributing hog products. Although these spreads between hog prices and wholesale and retail values of hog products have tended to be fairly stable since 1925, some decline occurred from 1931 to 1933. Since late 1933 these spreads have included the hog-processing tax.

products by consumers, the changes in hog prices from month to month and from year to year, as indicated earlier, are fairly closely related to changes in retail prices of hog products. Elements other than the cost of hogs to packers are also important items in the retail value of products obtained from hogs. These other costs, including processing, transportation, and other forms of distribution, ordinarily do not vary greatly from year to year. Consequently variations in prices paid by consumers for hog products are reflected to a very considerable extent in hog prices.

The close relationship between prices of hog products and prices of hogs is illustrated in figure 17, which shows the changes in hog prices at Chicago and in wholesale and retail values of the principal hog products at New York from 1924 to 1934. Retail prices of hog products at New York were used in making the chart because that city represents the largest surplus consuming center for hog products

in the United States, and prices in that city are representative of the entire northeastern area of the country, to which large quantities of the surplus hog products of the Corn Belt are shipped. But New York is not a large livestock market or packing center. For this reason, retail and wholesale prices of hog products in that city have been compared with prices of hogs at Chicago, the leading hog market. The products of many hogs slaughtered in Chicago are shipped to New York for consumption. In the upper section of the figure, actual hog prices per 100 pounds and the concurrent retail and wholesale values of the principal products obtained from 100 pounds of hog are shown. As indicated in the figure, the retail value is for 52.64 pounds of hog products, which quantity represents about 75 to 80 percent of the total yield of edible hog products from 100 pounds of hog, and it represents a greater proportion of the total value of all edible products similarly obtained. The wholesale value of 53.78 pounds of hog products represents the same products included in the computation of retail values, but because of waste and shrinkage the retail weight is slightly less than the wholesale weight.

In the lower section of figure 17 it will be observed that the spread between hog prices and concurrent retail values of the principal hog products was fairly constant during most of the period 1924-28, but in the years 1929-33, especially in 1932 and 1933 it tended to decline.¹⁹ This decline in the spread, however, was not so great as to cause a material change in the relation of hog prices and the retail value of hog products. But over a longer period than the last decade, as discussed later in this report, a marked change has occurred in the relationship between hog prices and wholesale and retail prices of hog products. Since the pre-war period most of the elements involved in the costs of processing, transporting, and distributing of hogs and hog products have increased considerably, and as a result the spread between hog prices and prices of hog products has widened materially during the last 20 years.

POSSIBLE WAYS IN WHICH GROWTH OF DIRECT MARKETING MIGHT HAVE AFFECTED HOG PRICES

In summarizing the steps involved in the determination of hog prices it may be stated briefly that consumers buy hog products from retailers at a price that will permit the available supply to be moved into consumption. The retail price of hog products, minus the charges per unit involved in retailing, determines the price at which packers or wholesalers can sell hog products to retailers. This wholesale price, which packers receive for hog products, minus charges per unit incident to processing and wholesale distribution of hog products, in turn determines the price which packers pay for hogs. With such a procedure involved in the buying of hogs and the processing and distribution of hog products, it appears that the price of hogs largely represents the residual which remains after marketing, processing, and distribution charges are deducted from the price paid by the ultimate consumers of hog products. Stated in another way, the total returns to producers for hogs are determined by the amount paid by consumers, both domestic and foreign, for hog products,

¹⁹ The spread between hog prices and retail values of the principal hog products since October 1933 is not strictly comparable with the spread prevailing prior to that time because of the hog-processing tax which became effective Nov. 5, 1933.

minus the costs and charges involved in the marketing of hogs and in the processing, distribution, and exportation of hog products.

It appears, therefore, that if changes in marketing methods, including the growth of direct marketing, have affected the level of hog prices, the effects would necessarily occur in one or both of two ways. (1) A change might have occurred in prices which consumers pay for hog products as compared with prices which would have prevailed if such growth had not taken place; it is highly improbable, however, that any change in hog marketing methods has affected retail prices of hog products. (2) They might have affected marketing, processing, and distributive charges, or the spread between prices of hogs and prices of hog products to consumers.

In appraising the possible effects of changes in marketing methods including the growth of direct marketing upon hog prices, consideration will first be given to a study of the factors affecting retail prices of hog products even though there is little likelihood that these prices have been affected by such changes in marketing methods. Second, changes in retail and wholesale prices of hog products in the last 25 years will be compared with changes in hog prices with special attention to the changes in the spread between hog prices and prices of hog products during the entire period. Finally the factors responsible for the marked changes in this spread will be considered, including a study of the relation between changes in methods of marketing hogs and the changes in the spread between hog prices and hog-product prices.

FACTORS AFFECTING RETAIL PRICES OF HOG PRODUCTS

Changes in the aggregate retail value of hog products consumed are closely associated with the changes in incomes of consumers. This is indicated in figure 18, which shows the index of the aggregate retail value of pork and lard consumed and an index of national income (realized income from production of goods and services) in the United States (8) for the period from 1910 to 1933. During this 24-year period the changes in the aggregate retail value of pork and lard consumed correspond closely with the changes in income. In view of this close relationship it appears that during this period consumer expenditures for hog products were determined chiefly by the level of incomes of consumers. With a given level of incomes of consumers the retail value of the domestic consumption of hog products tended to be about the same, regardless of the volume of consumption.

Retail prices of hog products for any given year or period represent the total retail value of hog products consumed in the year or period divided by the quantity of hog products consumed during the same time. Since changes in the aggregate retail value of hog products are determined chiefly by the changes in incomes of consumers, changes in retail prices of hog products are determined by changes in incomes of consumers and changes in the quantity of hog products consumed. As already shown, with changes in the total retail value of hog products governed chiefly by changes in incomes, large quantities and small quantities of hog products tend to sell for about the same total amount if incomes remain fairly constant. Under such conditions a change in the quantity consumed would be accompanied by a corresponding inverse change in retail prices of hog products.

In the period 1910-33 when changes in incomes of consumers are taken into account, it appears that a decline in the quantity of hog products consumed was accompanied by a rise in retail prices of hog products approximately sufficient to off-set the reduction in quantity; conversely, an increase in quantity of hog products consumed under similar conditions was accompanied by a decline in retail prices of hog products about sufficient to off-set the increase in quantity. It should be noted, however, that greater year-to-year variations in the quantity of hog products consumed than those which have occurred in the last 24 years might result in a somewhat different relationship between the changes in quantities consumed and changes in retail prices from that which apparently existed during the period under consideration.

Consumer buying power is not only an important factor affecting retail prices of hog products, but it is also an important element affect-

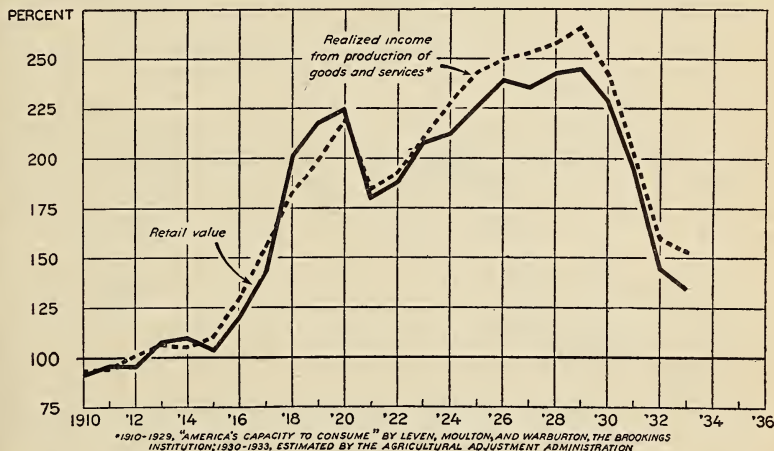


FIGURE 18.—RETAIL VALUE OF HOG PRODUCTS CONSUMED AND NATIONAL INCOME IN THE UNITED STATES, 1910-33. (1910-14=100.)

Changes in the aggregate retail value of hog products consumed in the United States were closely associated with changes in the total income of consumers (national income) during the period 1910-33. With a given level of incomes of consumers, the total retail value of a small quantity of hog products consumed tends to be about the same as that of a large quantity.

ing the prices of other meats. The close relationship between the changes in the aggregate retail value of beef consumed and the changes in the national income in the United States from 1910 to 1933 is shown in figure 19. Since the retail price of beef for any given period represents the total retail value of beef consumed divided by the quantity consumed, it appears that consumer buying power and the quantity of beef entering consumption channels are the chief factors which determine the level of retail beef prices.

In the foregoing analysis of retail prices of hog products, pork and lard have been combined, but since pork is the chief hog product, the analysis more nearly represents a study of the factors affecting the retail prices of pork than a study of lard prices. Just as in the case of pork and lard combined, the changes in the aggregate retail value of pork alone are likewise closely related to the changes in incomes of consumers. The retail price of pork for any given year, or period,

therefore, represents the aggregate retail value of pork consumed, divided by the quantity of pork consumed. Consequently it appears that changes in retail prices of pork are determined largely by changes in incomes of consumers and by changes in the quantity of pork consumed.

Changes in total value of lard consumed are also associated with the changes in incomes of consumers, and such incomes along with the quantity of lard consumed are important factors affecting lard prices. Other demand factors, such as supplies of competing fats and oils are important elements affecting lard prices. Export demand also is an important factor affecting lard prices, and is much more important than in the case of pork prices. In most years the proportion of the total production of pork exported is relatively small, but in the case of lard roughly from 25 to 40 percent of the total annual production of lard was exported in the years from 1921 to 1933.

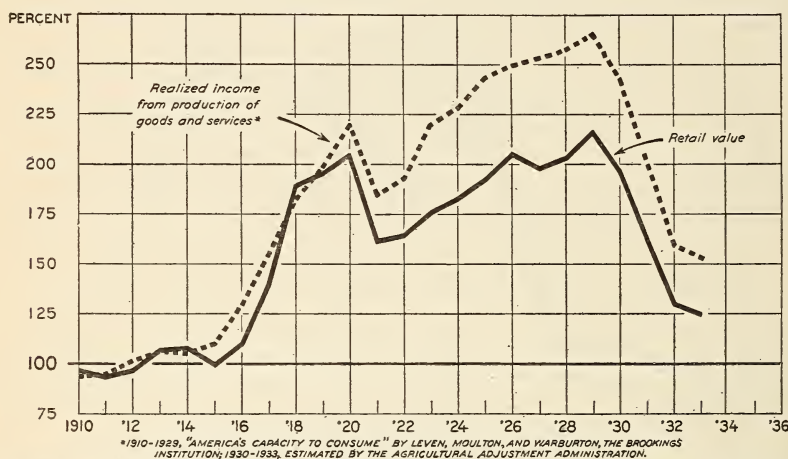


FIGURE 19.—RETAIL VALUE OF BEEF CONSUMED AND NATIONAL INCOME IN THE UNITED STATES, 1910-33. (1910-14=100.)

Changes in the aggregate retail value of beef consumed in the United States are also closely related to changes in incomes of consumers (national income). The relationship between incomes of consumers and retail value of beef consumed in the period 1910-33 is similar to the relationship between incomes of consumers and the retail value of hog products consumed in the same period shown in figure 18.

Most of the effect of competition of edible vegetable fats and oils on domestic lard prices is seen in the utilization of cottonseed oil in lard substitutes or vegetable shortenings. This oil usually represents about 80 percent of the total materials used in the manufacture of lard substitutes. The consumption of lard substitutes usually is slightly larger than the consumption of federally inspected lard; consequently such substitutes constitute an important part of the domestic consumption of edible fats and oils. A large part, usually 70 to 80 percent, of the cottonseed oil consumed in the United States is utilized in lard substitutes. Because of the close relationship of cottonseed oil to lard substitutes, the domestic supplies of cottonseed oil are an important factor affecting domestic lard prices.

Insofar as the effect of direct marketing of hogs upon the level of retail prices of hog products is concerned, the 24-year period beginning in 1910, for which the analysis was made, covers at least 16 years

(1910-25) when direct marketing was much less important than it became later. During the period since 1925, however, a very rapid growth has occurred in the direct marketing of hogs. Apparently throughout the entire period the changes in incomes of consumers have been the chief factor affecting the aggregate retail value of hog products consumed, and the changes in the level of retail prices of hog products in this period have been largely determined by the changes in incomes of consumers and changes in the quantity of hog products consumed. In the case of lard, it was indicated that the competition from edible vegetable oils, especially cottonseed oil, has also been an important factor affecting prices, but because of the minor importance of lard as a hog product the influence of changes in domestic supplies of cottonseed oil upon the level of prices for all hog products is relatively insignificant. Retail prices of hog products appear to have been determined in much the same manner in the years when the direct marketing of hogs was unimportant as in the period when it was rapidly expanding. For example, in 1926 retail prices of hog products were high because hog production and consumption of hog products were relatively small and incomes of consumers were relatively large. In 1932, on the other hand, the drastic reduction in consumer buying power in this country was the principal factor responsible for the very low level of hog-product prices in that year.

It has also been shown that changes in retail-beef prices in the period 1913-33 were determined chiefly by changes in incomes of consumers and changes in the quantity of beef consumed. In other words the factors affecting retail-beef prices were somewhat similar to the factors affecting retail prices of hog products. The fact that beef and pork are the major meat items in domestic food consumption probably accounts for the marked similarity in the relationships among retail prices of these products, incomes of consumers, and the quantities of these meats consumed. On the other hand, direct marketing has become very important in the case of hogs, whereas it has been much less important in the case of slaughter cattle. In view of the differences in marketing methods as between hogs and cattle, the fact that the changes in retail prices of hog products can be explained in much the same manner as changes in retail prices of beef, supports the conclusion that changes in marketing methods have had no appreciable effect upon retail prices of hog products.

RELATION OF RETAIL AND WHOLESALE PRICES OF HOG PRODUCTS TO HOG PRICES

In a preceding section the factors responsible for the variation in retail prices of hog products were discussed. This section deals with the relationships between retail and wholesale prices of hog products and hog prices, and the changes which have occurred in these relationships during a period of more than 20 years will be shown.

CHANGES IN HOG PRICES AND RETAIL PRICES OF HOG PRODUCTS

It has already been pointed out that a marked change in the relationship between prices of hogs and retail prices of hog products has occurred during the last 20 years. The proportion which returns to producers constitutes of the retail value of hog products has been materially lower in the post-war period than in the pre-war period.

Year-to-year changes in hog prices per 100 pounds and in the retail values of the principal edible hog products obtained from 100 pounds of hog, from 1910 to 1933, are shown in the upper section of figure 20. The hog prices here shown are average prices of hogs slaughtered under Federal inspection and farm prices of hogs in the United States. In computing the retail value of hog products shown in figure 20, yearly average prices of bacon, hams, pork chops, and lard, as reported by the United States Bureau of Labor Statistics for 51 cities, were used. The quantity of the principal hog products used in computing the retail value was 52.64 pounds, the same as that used in the data for figure 17, and prices for products included in this quantity, but not reported by the Bureau of Labor Statistics, were estimated. The retail values used in figure 17, however, are based on New York City

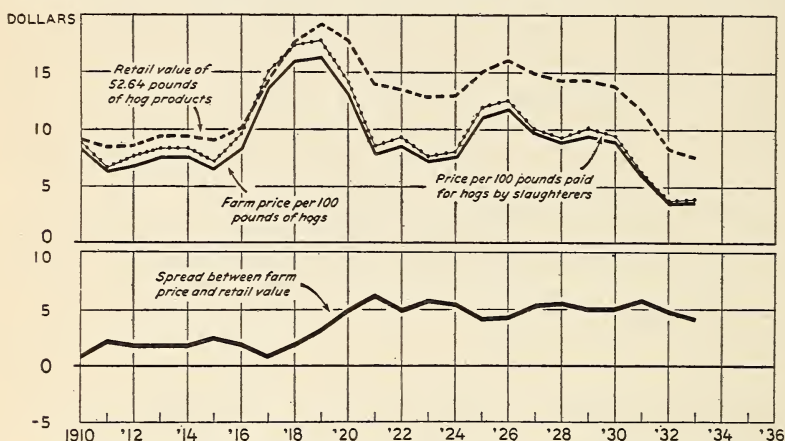


FIGURE 20.—HOG PRICES, RETAIL VALUE OF PRINCIPAL HOG PRODUCTS, AND SPREAD BETWEEN PRICE AND VALUE, 1910-33.

In the period 1910-33, yearly changes in hog prices tended to follow the changes in retail values of the principal hog products obtained from 100 pounds of hog, but as shown in the lower section of this figure, the spread between farm price of hogs and the retail value of hog products widened materially from the pre-war period to the post-war period. In 1932 and 1933 the spread was reduced somewhat. Changes in prices paid for hogs by slaughterers have corresponded closely to changes in farm prices of hogs.

prices as compiled by the Bureau of Agricultural Economics rather than on an average of 51 cities.

In general, throughout the entire period 1910-33, hog prices and retail values of hog products tended to change in the same direction, but the changes were not always the same either in percentages or in absolute figures. It will be observed in figure 20 that in the pre-war years 1910-14, the spread between hog prices and the retail value of the principal hog products was fairly stable. But it declined somewhat in 1916 and 1917 and was unusually narrow in the latter year. In 1918 and 1919 the retail value of hog products rose much more rapidly in terms of dollars than did hog prices, and the spread between the two widened considerably. The decline in the retail value of hog products in 1920 and 1921 was accompanied by an even greater dollar decline in the price of hogs, and the spread continued to increase, reaching a record level in 1921.

In the years 1922-24 both hog prices and retail values of the principal hog products declined, the drop in dollars being slightly greater in the case of the retail value of hog products than in the case of hog

prices; that is, some decrease in the spread between hog prices and the retail value of hog products occurred in this period, and a further decrease occurred in 1925. Despite these declines, the margin of the retail value of hog products over hog prices in the years from 1922 to 1925 was much greater than in the pre-war period. From 1926 to 1928 the spread between hog prices and retail values of hog products again widened, and it continued wide from 1929 to 1931. In 1927-29 this spread averaged nearly 3 times as great as in the pre-war years. In 1932 and 1933 the decline in the retail value of hog products was accompanied by a lesser decline in hog prices in 1932 and by a slight rise in such prices in 1933. Consequently, the spread narrowed considerably in these 2 years, in spite of the fact that the processing tax on hogs was in effect during the last 2 months of 1933. In both 1932

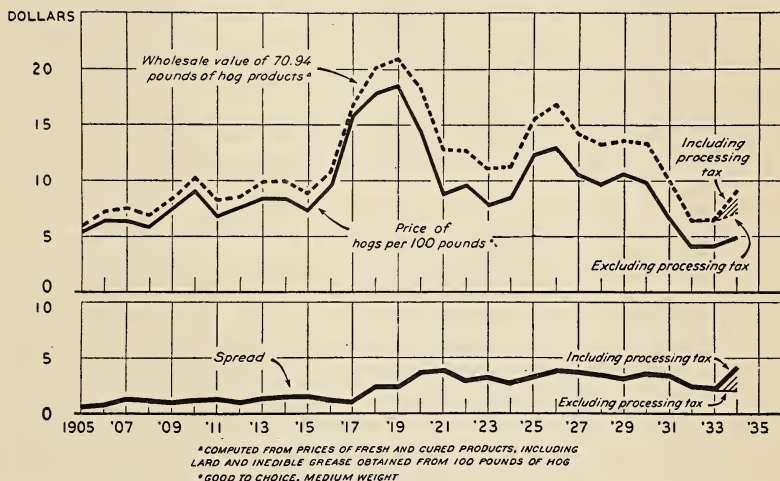


FIGURE 21.—PRICE OF HOGS AND WHOLESALE VALUE OF HOG PRODUCTS AT CHICAGO AND SPREAD BETWEEN PRICE AND VALUE, 1905-34.

Yearly changes in hog prices at Chicago since 1905 have been closely related to the changes in the wholesale value of hog products obtained from 100 pounds of hog at that market. From 1905 to 1917 little change occurred in the spread between hog prices and the wholesale values of hog products, but from 1918 to 1921 it more than doubled. Since 1921 the spread has continued relatively wide, although it was reduced somewhat in 1932 and 1933.

and 1933, however, the spread was more than twice as wide as in the pre-war period 1910-14.

This very marked change in the relationship between hog prices and retail prices of hog products has resulted chiefly from the increase in costs involved in the processing and distribution of hogs and hog products during the long period since 1910. The factors responsible for these increased costs are discussed in a subsequent section.

CHANGES IN HOG PRICES AND WHOLESALE PRICES OF HOG PRODUCTS

The relationship between hog prices and wholesale prices of hog products during the period since 1913 has been very similar to the relationship of hog prices and retail prices of hog products in the same period. Yearly average prices of hogs per 100 pounds and the wholesale values of 70.94 pounds of hog products at Chicago from 1905 to 1934 are shown in the upper section of figure 21, and the spread between prices and values is shown in the lower section. The wholesale

values of products here shown, however, are not directly comparable with retail values shown in figure 20, since the wholesale value was computed on the basis of a greater quantity of the hog products obtained from 100 pounds of hog than was used in computing the retail value. Furthermore, it was computed on the basis of Chicago prices, whereas the retail value was computed on the basis of the average retail prices of products in 51 cities. The hog prices used in figures 20 and 21 also differ in that farm prices of hogs in the United States were used in the comparison with retail values, whereas prices of the best grades of medium-weight hogs at Chicago were used in the comparison with the wholesale values.²⁰

It will be observed in figure 21 that throughout the period 1905-34 hog prices and wholesale values of hog products obtained from 100 pounds of hog tended to change in the same direction, but the changes were often unequal, either relatively or absolutely, and some marked variations in the spread between hog prices and wholesale values of hog products occurred. In 1905 and 1906 this spread was the smallest for the entire period. In the years from 1907 to 1917, however, no substantial change occurred in the spread between the price of hogs and wholesale value of hog products, but following 1917 very marked changes did occur.

In 1918 and 1919 the advance in terms of dollars in the wholesale value of hog products was greater than the corresponding rise in hog prices, and the spread between price and value in both years was more than double that of 1917. In 1920 and 1921 the decline in the wholesale hog-product values in dollars was less than that in the price of hogs, and the spread continued to widen in these years. The maximum spread between the price of hogs and the wholesale value of hog products for the entire period 1905-34 was reached in 1921. In that year the spread was about 3 times as great as the average spread in the years from 1910 to 1914. As indicated earlier, the maximum spread between the price of hogs per 100 pounds and the retail value of 52.64 pounds of hog products in the years from 1910 to 1933 also was reached in 1921.

In the period 1922-24 some decrease in the spread occurred, but in 1925 and 1926 the spread again widened, becoming almost as wide in 1926 as in 1921. In the years 1927-31, the spread continued wide, being more than 2½ times as wide as in the 1910-14 period. In 1932, however, the drastic decline in hog prices was accompanied by an even greater decline in the wholesale value of hog products, and the spread was reduced considerably; but despite this decrease in the spread in 1932 it was nearly twice as wide in that year as in the pre-war years 1910-14. The spreads between hog prices and wholesale values of hog products in 1933 and 1934 are not comparable with the spreads in earlier years, because of the processing tax on hogs levied in connection with the Agricultural Adjustment program. But, when the spread in each of these 2 years is adjusted for this tax, the resulting spread is slightly less than that of 1932.

It should be recognized that it is not possible to deduct the wholesale spread shown in figure 21 from the spread between the hog prices

²⁰ Data on wholesale prices of hog products at the Chicago market from 1905 to date are fairly complete, and are much more complete than any retail price data for hog products available for a period of 20 years or longer. The price of medium-weight hogs which was selected to compare with the computed wholesale values is more desirable for this purpose than any other series of hog prices, since the wholesale prices used were for products which were derived largely from medium-weight hogs. This series of hog prices, however, is closely correlated with the two series shown in figure 20.

and retail value of hog products shown in figure 20 to determine the spread between the wholesale and retail value of hog products. A comparison of figures 20 and 21, however, indicates that the spread between hog prices and wholesale values of hog products widened considerably from the pre-war period to the post-war period just as in the case of the spread between hog prices and retail values of hog products. Other information shows that the spread between the wholesale and retail values of hog products also widened materially during this period.

FACTORS AFFECTING THE SPREAD BETWEEN HOG PRICES AND WHOLESALE AND RETAIL VALUES OF HOG PRODUCTS

It has been shown in a previous section that the chief factors affecting retail prices of hog products have been changes in incomes of consumers and changes in the quantity of hog products consumed. On the other hand, it has also been shown that a marked change in the relation of prices of hogs and prices of hog products has occurred in the last 20 years. An analysis of the changes in the spread between hog prices and prices of hog products and of the factors causing these changes is necessary, therefore, to determine the effect, if any, of changes in hog-marketing methods upon hog prices.

INCREASES IN PROCESSING AND DISTRIBUTIVE CHARGES

The widening of the spread between prices paid for raw products and prices paid by consumers for the finished products has not been confined to hogs and hog products, but, as will be shown later, it has also been an important characteristic of nearly all agricultural products. Numerous factors have been associated with this widening spread between prices received by producers and prices paid by consumers. An important reason for the increase in the spread between the prices paid for raw products (in this case for hogs), and the prices paid for the finished products derived therefrom has been the increases in the amount paid per unit for processing and distribution in the form of wages, transportation charges, and rents. Another important cause for the increase in the spread has been the increase in the number of processing and distributive services.

However, the reasons for the higher level of hog-product prices relative to hog prices in the post-war years, as compared with those in the pre-war years, are somewhat more complicated than either of the conclusions in the preceding paragraph indicate. During the last 20 years numerous and important changes have occurred in the operations of processors of livestock and in the methods and agencies involved in the distribution of livestock products. Some of these changes have tended to widen the spread, whereas others have tended to decrease it. In some instances the character of the product sold to consumers has been greatly changed during the last 20 years. Such changes usually have involved increased costs of processing, and in some cases, higher distributive costs.

The changes in wages, freight rates, and rents during the 21-year period 1913-33 are shown in the upper section of figure 22 and the changes in the spread between hog prices and the retail value of the principal hog products are shown in the lower section. The increase in wages from 1913 to 1929 was relatively less than the increase in the spread, but the trends in both during this period were very similar.

Wages are an important element in both freight rates and rents, and changes in all three items in general have been very similar. Freight rates on hog products and freight rates in general have not increased so much as have wages, but they increased materially from 1917 to 1921, when the spread between hog prices and hog-product values was widening rapidly. Rents also increased sharply from 1917 to 1921, although not so much as did the spread between hog prices and hog-product values. From 1921 to 1929 rents were fairly stable at the high level established at the beginning of the period. The index of rents shown in the above figure, however, is a measure of house rents rather than of rents of commercial property, and so it may not be an adequate measure of changes in processing and distributive costs resulting from changes in rents. Since 1931

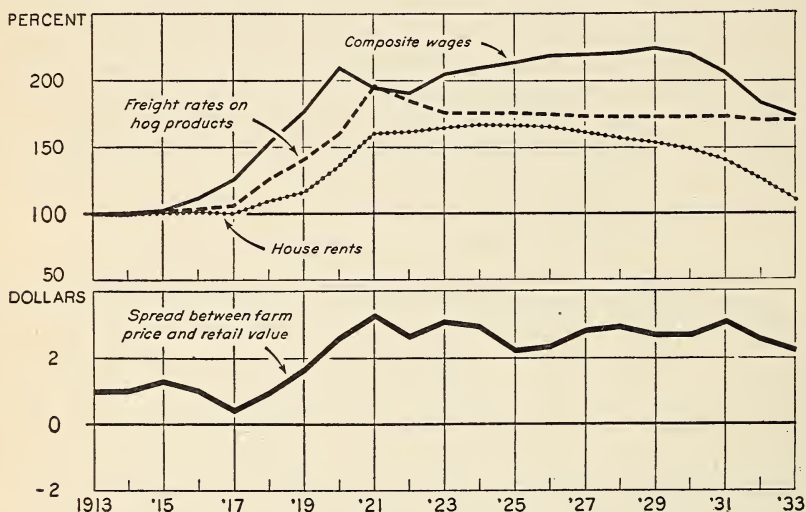


FIGURE 22.—WAGES, RENTS, AND FREIGHT RATES AND SPREAD BETWEEN FARM PRICE OF HOGS AND RETAIL VALUE OF HOG PRODUCTS, 1913-33. (1913=100.)

An important reason for the widening of the spread between hog prices and retail values of hog products from the pre-war period to the post-war period was the increase in processing and distributive charges resulting from higher wages, freight rates, and rents, in post-war years as compared with those in the pre-war years. The reduction in the spread in 1932 and 1933 was associated with a decline in wage levels and rents in these years.

the spread between hog prices and the retail value of hog products has declined considerably; at the same time material decreases in wage rates and rents have occurred. Freight rates on hog products generally have not been changed appreciably since 1922.

Changes in the character of processing and increases in distributive services have been important factors tending to widen the spread between hog prices and retail values of hog products. The tendency for population to increase relatively in urban centers and the decrease in the size of families have resulted in sales of products in smaller units, involving greater expenses in packaging and more waste and increased labor costs in trimming and cutting. Moreover changes in methods of curing involving additional costs for processing have been introduced in the last 20 years.

On the other hand, many economies and savings have been developed in the processing of hogs and distribution of hog products

which have tended to reduce the spread between hog prices and retail values of hog products. Such developments include improvements in processing and distributive methods and in machinery and equipment used by processors and distributors, and the elimination or replacement by other units of certain agencies involved in the distribution of meats and meat products.

To what extent these various economies in processing and distribution which tend to reduce the spread have offset the increased costs resulting from the greater number of processing and distributive services cannot be readily determined. But even if such savings and economies in processing and distribution have been sufficiently large to offset completely the higher costs resulting from the greater number of processing and distributive services, the fact remains that if the number and character of such services in recent years had been essentially the same as in the pre-war period, the costs of these services would have been much higher than in the pre-war period because of the increases in wages, rents, transportation charges, etc.

RELATIVE IMPORTANCE OF CERTAIN EXPENSE ITEMS IN CHARGES FOR PROCESSING AND DISTRIBUTION

It was pointed out in the preceding section of this chapter that the spread between hog prices and the wholesale value of hog products had widened greatly from the pre-war period to the post-war period, and likewise that spread between the wholesale and retail values of hog products had increased materially in the same period. As indicated earlier in this section, increases in the level of such items as wages and rents have been important factors in the widening of the total spread between hog prices and retail values of hog products. These items are not of equal importance in expenses of retailers and processors, but in the case of both retailers and packers wages or labor costs are a very important factor in total expenses.

The importance of labor costs in the retailer's total expenses is shown clearly by the results of studies relating to retail margins made since the World War period. In 1923 a survey of 142 retail meat markets located in several large cities showed that salaries and wages accounted for 64 percent of the total expense of operation of these meat markets (not including cost of meats and other products handled) (4). Rent, the second most important expense item, constituted 10.6 percent of the total expenses.

An analysis of the report on distribution of meats through retail stores as shown by the Census of Distribution for 1929 also indicates the importance of labor costs in the meat retailer's total expenses for the entire country in 1929. The analysis shows that the total expenses of all meat markets were equal to 19.6 percent of sales and that wage expense alone was equivalent to 12.4 percent of sales. In other words, in this case wages made up 63 percent of the total expenses of meat markets. For other types of stores handling meats table 25 indicates that wages are about as important in total expenses as in the case of meat markets. The data of table 25 were compiled by the Bureau of the Census, Census of Distribution, and they are based upon reports from 481,991 retail food stores, 43,788 of which were meat markets, exclusively.

TABLE 25.—*Expenses in food stores, in percentage of sales, 1929*

Type of store	Total wage cost	Rent	All other expense	Total expenses
	Percent	Percent	Percent	Percent
Combination stores.....	10.00	2.29	3.81	16.10
Meat markets.....	12.39	3.21	4.01	19.61
Grocery stores.....	10.92	2.84	3.60	17.36
All food stores.....	11.88			19.50

Compiled from Census of Distribution, 1930. Bureau of the Census.

Labor costs are of course an important item in the wholesale spread or packers' margin. Wages per worker in the packing industry and the wage cost per 100 pounds dressed weight of livestock slaughtered in wholesale packing plants are shown in figure 23 for certain years

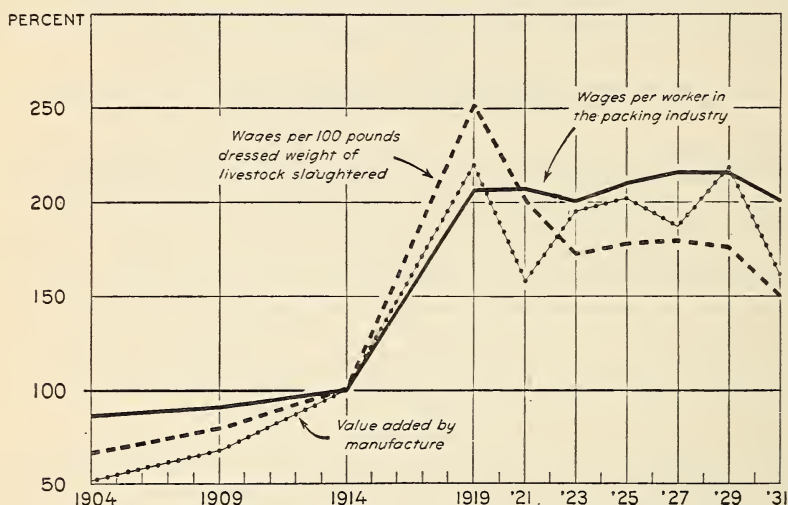


FIGURE 23.—WAGES, AND VALUE ADDED BY MANUFACTURE IN THE MEAT-PACKING INDUSTRY, 1904-31. (1914=100.)

Wages in the packing industry showed about the same relative increase from the pre-war period to the post-war period as did wages in general. Wage costs per unit of output in the packing industry increased more from 1914 to 1919 than did wages per worker, but they also declined more from 1919 to 1931. In 1931 wages in the packing industry were somewhat less than in 1929 but were much greater than in the pre-war period. Changes in the value of products added by manufacture in the packing industry are closely related to changes in wages.

during the period 1904-31. The data for this figure were compiled from reports of the Bureau of the Census, Census of Manufactures, and the years included are those beginning with 1904 for which the Census of Manufactures was taken. They include 1904, 1909, 1914, and all odd-numbered years from 1919 to 1931, inclusive.

It will be observed in the figure that wages per worker in the packing industry more than doubled from 1914 to 1919, and from 1919 to 1929 they remained fairly stable near the high level reached in the former year, but some decline occurred from 1929 to 1931. The increase in wages per worker in the packing industry from the pre-war period to the post-war period corresponds fairly closely with the increase in the general level of all wages as shown in figure 22

and with the increase in the wholesale spread for the same period (fig. 21).

From 1914 to 1919 the wage cost per 100 pounds of dressed weight of livestock slaughtered increased even more than wages per worker; hence total labor costs of the packing industry increased more than rates of wages increased. From 1919 to 1923 the wage cost per unit of output decreased very materially and remained fairly stable from 1923 to 1929, whereas from 1919 to 1929 practically no change occurred in wages per worker in the industry. From 1919 to 1923 the output of the packing industry per worker apparently increased considerably. This change probably was brought about by the adoption of labor-saving devices as well as by greater efficiency of labor. The decline in the wage cost per unit of product did not represent an equivalent decline in packing-house costs, since the greater use of machinery involved some additional cost. Nevertheless it seems probable that substantial savings were made.

A close relationship of the wage cost per unit of output in the packing industry to the value of products added by manufacture in the industry as reported by the Census of Manufactures, is also indicated in figure 23. The value added by manufacture represents the value of the processed products minus the cost of raw materials, including livestock, containers, and fuel and purchased energy. In other words, it is roughly equal to the margin which the packing industry obtains for wages, salaries, interest, taxes, depreciation, profits, etc. The relative importance of wages as an element in the value added by manufacture is indicated by a comparison of the two items in any given year. In 1929, for example, the total amount expended for wages was equal to 36 percent of the value added by manufacture, and in the same year wages and salaries combined were equivalent to 47 percent of the value added by manufacture. In 1919, when wage costs per unit of output were much higher than in 1929, wages and salaries equaled 58 percent of the value added by manufacture.

On the basis of available information, freight charges cannot be directly compared with other expense items involved in processing and distribution. Some indication of the importance of freight charges can be obtained by comparing the freight charge on a given quantity of hog products, from a surplus hog-producing area to an important center of consumption, with the retail value of the same quantity at the point of consumption. In 1933, for example, the freight charge on 70 pounds of hog products (25 pounds fresh pork and 45 pounds cured pork and lard) from Des Moines to New York was 56 cents, and the retail value of 70 pounds of hog products at New York in that year was \$10.60. The freight charge from Des Moines to New York were about 5 percent of the total retail value at New York. But, on shipments of hogs from Iowa to Chicago for slaughter, the products of which were later shipped to New York, the combined freight charge on 100 pounds of hogs from Des Moines to Chicago and on 70 pounds of hog products from Chicago to New York was 78 cents. This amount equalled about 7 percent of the retail value of 70 pounds of hog products in New York as of 1933.

CHANGES IN SPREAD BETWEEN PRICES OF OTHER FARM PRODUCTS AND RETAIL PRICES OF PRODUCTS DERIVED THEREFROM

The change in the relationship between raw-material prices and prices of finished products since the pre-war period has not been confined to hogs and hog products; it also has occurred in the case of prices of most other farm products used for food and the retail prices of their derivative products. The spread between prices of other livestock and the retail values of their products has widened considerably from the pre-war period to the post-war period.

Changes in cattle prices and the retail value of the beef obtained from 100 pounds of such cattle from 1910 to 1933 are shown in the upper section of figure 24. The spread between the farm price of beef cattle and the retail value of the products obtained from 100 pounds of such cattle is shown in the lower section of this figure.

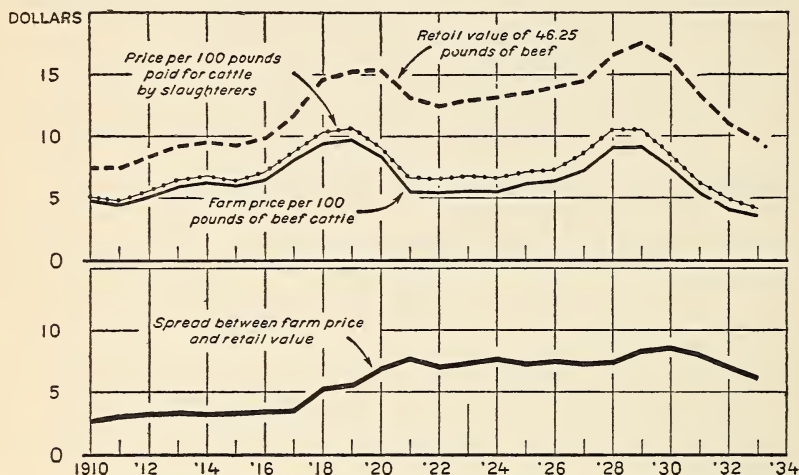


FIGURE 24.—CATTLE PRICES, RETAIL VALUE OF BEEF, AND SPREAD BETWEEN PRICE AND VALUE, 1910-33.

Yearly changes in cattle prices correspond closely with changes in the retail value of beef obtained from 100 pounds of cattle. Just as in the case of hogs and hog products, the spread between the farm price of cattle and the retail value of beef widened materially from the pre-war period to the post-war period. From 1931 to 1933 this spread was reduced considerably, but in the latter year it was still much wider than in the pre-war period.

Just as in the case of hogs and hog products, the absolute rise in the retail value of beef was considerably greater than the advance in cattle prices in the years from 1917 to 1919. The spread between the two widened during this period and continued to widen in 1920 and 1921. The spread between the price of cattle and the retail value of beef continued wide throughout the post-war period as compared with the spread prevailing in the pre-war period, although some decline occurred from 1931 to 1933.

Data used for the computation of the spread in the case of both hogs and cattle were sufficiently complete in both instances to show the marked similarity in the changes in the relationship between hog prices and the retail value of hog products in the last 25 years in one case and between cattle prices and retail beef values during the same period in the other. The spreads between prices and values in the two cases cannot be directly compared because byproducts are of

much greater importance in the case of cattle than in the case of hogs. Since hogs and cattle, as well as hog products and beef, generally move through the same channels of processing and distribution, it is apparent that the factors responsible for the widening of the spread between the price of cattle and the retail value of beef were essentially the same as those resulting in the increased spread between the price of hogs and the retail value of hog products.

A comparison of prices of other farm products and retail prices of products derived from these farm products shows much the same changes in relationship in the last 20 years as are shown for hog prices and hog-product prices and for cattle prices and beef prices in that period. Figure 25 shows the yearly average United States farm price per bushel of wheat and the retail value of bread obtained from a bushel of wheat from 1913 to 1933. The spread between the price

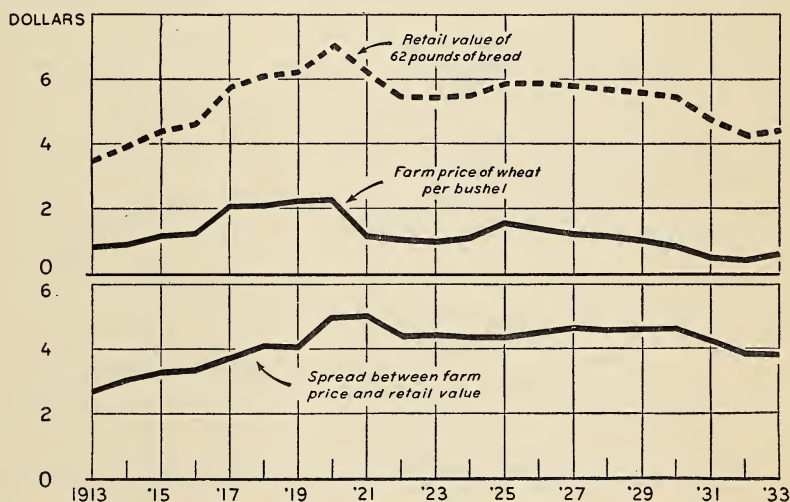


FIGURE 25.—FARM PRICE OF WHEAT AND RETAIL VALUE OF BREAD, AND SPREAD BETWEEN PRICE AND VALUE, 1913-33.

Yearly changes in the farm price of wheat per bushel correspond fairly closely with the changes in retail value of bread derived from a bushel of wheat. From the pre-war period to the post-war period, however, the spread between the price of wheat and the retail value of bread has widened considerably. The relationship between prices of wheat and bread has been somewhat similar to that between prices of hogs and hog products as shown in figure 20.

of wheat and the value of bread is shown in the lower section of the figure. In this case also, the spread between the farm value and the retail value increased in the war years and continued much greater throughout the post-war period than in the pre-war period. The factors responsible for this material increase in the spread between the price of wheat and the retail value of bread are undoubtedly much the same as in the case of hogs and hog products.

Throughout the post-war period retail prices of food products were higher relative to prices in the pre-war period than were prices of farm products utilized for food. The changes in retail values of 10 important foods and in the farm values of equivalent products are shown in the upper section of figure 26, and the spread between the two is shown in the lower section of this figure. In computing

the composite retail value of 10 foods shown in figure 26, retail prices of the several foods were weighted by the average quantity of each food consumed monthly by a typical American family (15). The composite farm value was computed by weighting farm prices by the equivalent quantities of farm products. It is noteworthy that the spread between the farm and retail values of food products widened considerably from 1917 to 1920 and continued wide during the post-war period, although some decline has occurred since 1930. The relationship between farm prices of most products used for food and the retail prices of foods in the last 20 years, therefore, appears to have been very similar to that already described between prices of hogs and prices of hog products.

The increase in the spread between the farm value of products used for food and retail food values since 1913 also appears to have been the

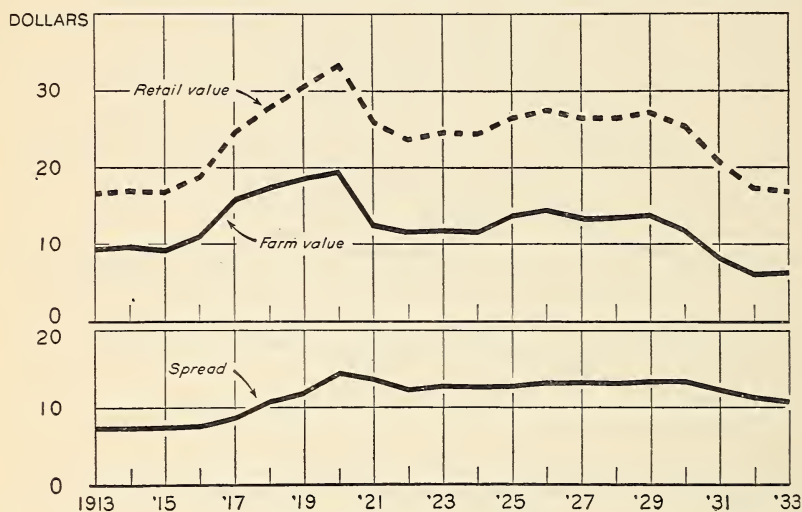


FIGURE 26.—AVERAGE RETAIL AND EQUIVALENT FARM VALUE OF 10 IMPORTANT FOOD PRODUCTS AND SPREAD BETWEEN VALUES, 1913-33.

The upper section shows the yearly changes in the retail value of 10 important food products purchased by a typical American family and changes in the farm value of products from which the 10 food products were derived. Just as has been shown in the case of several individual farm products including hogs, the rise in the retail prices of foods generally from the pre-war period to the post-war period was greater than the advance in farm prices of corresponding products. The increase in the spread between the farm value and retail value of food products in the last 20 years is shown in the lower section of this figure.

result of increases in distributive and processing charges. The rise in wage levels from 1913 to 1929 occurred in nearly all industries, and increases in transportation charges, rents, and taxes during this period were applicable to nearly all products and to nearly all business. The tendency toward a larger number of distributive services and toward more highly processed products was also shown by most food products. Likewise it appears that in the case of most food products economies and savings in processing and distribution have been developed since 1913. Just as in the case of hogs and hog products, the final result of these various forces has been a marked increase in processing and distributive charges and a corresponding increase in the spread between prices of farm products used for food and retail food prices from the pre-war period to the post-war period.

EFFECT OF GROWTH OF DIRECT MARKETING ON THE SPREAD BETWEEN HOG PRICES AND RETAIL AND WHOLESALE VALUES OF HOG PRODUCTS

On the basis of the foregoing analysis it appears that the widening of the spread between hog prices and wholesale and retail values of hog products in the last 20 years has been caused chiefly, but perhaps not entirely, by factors like increases in wages, rents, and freight rates, which are not related to changes in methods of marketing hogs. Since these changes in marketing methods have not affected retail prices of hog products and have not materially influenced the spread between hog prices and prices of hog products, it appears that the growth of direct marketing has had little if any effect on changes in the level of hog prices.

It is possible that, to a minor extent, the growth of direct marketing may have affected the spread between hog prices and prices of hog products. As shown elsewhere in this report the growth of direct marketing has been associated with a marked shift in the hog-packing industry from the area east of the Mississippi River to the north-western Corn Belt. Available information indicates that this shift in the packing industry tended to reduce costs of processing and distribution below what they otherwise would have been. In another section it was stated that, in general, the cost of marketing hogs direct tended to be less than the cost of marketing through public markets. Therefore it is probable that to a limited degree the increase in direct marketing of hogs may have caused the spread between farm prices of hogs and retail prices of hog products to have been less than it would have been otherwise.

An important reason for the conclusion that the growth of direct marketing has not affected materially the spread between hog prices and prices of hog products is the fact that the changes in the relationship between prices of nearly all raw materials and prices of finished products has been much the same as the changes in the relationship between hog prices and hog-products prices. The widening of the spread between farm prices of the chief products used for food and retail food prices from the pre-war period to the post-war period was shown, and it was also shown that in the case of individual farm products, such as cattle and wheat, the spread between farm prices and retail prices also widened considerably. Figure 27 shows the marked similarity of the spread between hog prices and retail prices of hog products and comparable spreads for cattle and wheat and 10 foods in the period from 1913-33. In the case of cattle direct marketing has not been so important as it has been in the case of hogs, and in the case of wheat it has been of no importance. Hence the spread between hog prices and prices of hog products would have widened materially in the period since 1913 even if direct marketing had continued on only a limited scale or if it had been eliminated entirely.

It also appears that the widening of the spread between hog prices and hog-product prices and the rapid increase in the direct marketing of hogs have not been closely related from the standpoint of time. As shown in figure 27, much of the widening in the spread occurred prior to 1921, whereas available data indicate that the most rapid growth in direct marketing has occurred since 1925. It is also shown in figure 27 that the spread was reduced substantially from 1931 to 1933, as some of the costs involved in processing and distribution, such as wages and rents, were reduced. On the other hand, the direct

marketing of hogs showed a further increase during this period. The fact that the widening of the spread and the increase in the proportion of hogs marketed direct have not been associated in time of



FIGURE 27.—SPREADS BETWEEN FARM PRICES AND RETAIL VALUES OF FOOD PRODUCTS, 1913-33.

There has been marked similarity in the changes in spreads between farm prices of several products used for food and the retail value of the corresponding food products during the last 20 years. In the case of hogs and hog products cattle and beef, wheat and bread, and 10 important food products combined, the spread between farm prices and retail prices has been materially wider in the post-war period than in the pre-war period. Little relationship exists between the increase in direct marketing of hogs and the changes in the spread between farm prices of hogs and retail values of hog products in the period since 1922.

occurrence within the 20-year period offers additional support to the conclusion that the rapid growth of direct marketing has not materially affected the spread between hog prices and hog-product prices.

CHAPTER 8

COMPETITION FOR HOGS

In view of the marked changes that have occurred during the last decade in the methods by which, and in the channels through which, hogs are marketed the question arises as to whether there have been any resulting significant changes in the degree of competition for hogs.

The nature of competition for hogs and the question whether the degree of competition at one period is greater or less than at another are rather complex. The principal statistical evidence as to whether competition has decreased with the growth of direct marketing is obtained by comparing the margins between prices paid by packers for hogs and the composite wholesale prices of hog products, to determine whether these margins have widened during recent years when direct marketing has increased. Since the principal factors determining changes in the wholesale prices of hog products are changes in supplies of hogs and in the level of consumer incomes, neither of which are related to the methods by which hogs are marketed, the measurable effect, if any, of changes in marketing methods on competition for hogs should show in the margins between hog prices and composite wholesale prices. These margins do not indicate any lessening in this competition.

Another approach to the subject is to consider the nature of competition for hogs, especially the factors tending to increase or decrease this competition, and whether these factors are likely to be affected by changes in the methods by which hogs are marketed. Such a consideration cannot be set forth in terms of statistical analysis, for the subject does not lend itself to statistical treatment, but must be in descriptive terms and based upon reasoning from known facts or valid assumptions to what seem to be logical conclusions. This chapter is devoted to an analysis of the competition for hogs from this point of view.

HOW THE PRICE LEVEL OF HOGS IS DETERMINED

DIFFERENT SERIES OF HOG PRICES

There is a difference between the general level of hog prices paid by packers and the prices that producers receive for their hogs. The price received by the individual producer is the difference between the price paid by the packer who buys his hogs and the charge for getting those hogs to the packer. There is a considerable range in the prices paid by packers for hogs, these differences being principally determined by the factor of transportation. In general, the further removed the packer is from the centers of deficit production (or of surplus consumption) the lower the price paid. There is also a considerable variation in the costs of getting hogs to the packer, which costs must be deducted from the packers' price of hogs to give the net price to the producer. These costs are those for transportation and marketing services. The further the hogs are moved the

higher the transportation deductions, but in general this is about offset by the higher packer price. Differences in cost of marketing charges, such as yardage, commissions, and insurance, tend to increase or decrease the net returns to producers.

There are two general levels of hog prices in common use. The one is the average cost of hogs, at the plant, for all packers; the other is the average price received by producers for hogs sold. Each of these prices is reported monthly by the United States Department of Agriculture. The former is a more exact price since it is definitely weighted by actual purchases of all kinds of hogs, being based on returns from packers who slaughter a large proportion of the commercial supply of hogs.

There is also a general level of hog prices based on the average daily, weekly, and monthly costs of hogs to packers and shippers at specified markets. Since Chicago is the largest hog market and since the headquarters of the large national packers are located there, Chicago prices are most commonly used. These individual market records are the only ones available giving the short-time fluctuation in hog prices. While the actual monthly averages of these various series of prices are different, for purposes of showing relative changes from month to month or year to year, it makes little difference which is used.

NATURE OF PACKER COMPETITION

The cost of hogs to packers represents the composite judgment of all packers as to the value of hogs as raw material for the production of hog products based on the current prices of these products and the anticipated value at some future period. This "cost" price evolves from the competition of all packers for a current supply of hogs offered for sale. Most packers have their individual judgments as to what hogs are worth; these judgments are based on the current cut-out value of hogs (obtained by multiplying the current wholesale prices of the principal hog products by the proportion which each product constitutes of the total carcass) and on opinions as to the future value of hog products that are to be processed for future sale. These opinions as to future values in turn are based on information as to future hog supplies, supplies of hog products in storage, prospective supplies and prices of competing foods and future consumer demand.

For the purpose of this study the questions of how this competition of all packers for a current supply of hogs finally is reflected in a day-to-day and week-to-week price of hogs to producers and whether changes in the methods of marketing hogs may affect this competition and resulting price are of primary importance. Hence a rather detailed consideration of the way in which this competition operates is desirable.

TWO BASIC ASSUMPTIONS

As a beginning of this consideration two broad assumptions are made. The first is that packers, as a whole, at all times try to sell hog products for the highest prices obtainable that will enable them to move the current supply for sale. The second is that packers at all times try to buy hogs at the lowest prices at which their currently needed supply can be obtained. Profits in the hog-packing industry come from the margin between the amount received from hog products

sold and the cost of hogs. Profits are realized only when this margin is larger than all costs of processing and distributing hog products.

From the first assumption it follows that, by and large, the total amount obtained for a given amount of hog products over a shorter or longer period is about all that could be obtained if that supply is to move into consumption. Hence this amount sets the upper limit of the value of the hogs furnishing the supply of products. This upper limit could be little changed regardless of how the supply of hogs was obtained. The part of this value of hog products that is paid out for hogs processed depends on the margin taken from the total value for processing and distributing costs and profits. The size of the margin depends largely on the level of such costs and on the competition among packers for the supply of hogs available.

FACTORS INFLUENCING PACKERS' BUYING POLICIES

Although the second assumption was that all packers try to buy hogs as cheaply as they can, this inclination is restrained by the necessity of getting hogs for slaughter; and the fact that all packers face this necessity results in a competition for the available supply that finally determines the level of prices paid. In determining their buying operations individual packers have a variety of conflicting interests that must be considered. There is a plant that must be kept operating at an efficient capacity to keep down processing charges per unit, an established trade that must be kept supplied with various products, branded products the standards of which must be maintained, contracts that must be carried out, an overhead and selling organization that cannot be readily adjusted to changing volume. All of these make it desirable, if not absolutely necessary, that a regular supply of hogs be at hand for processing. On the other hand, products must be sold in a highly competitive market, operating and other costs must be covered, profits must be made or at least losses must be avoided. Hence the constant urge to keep down the cost of hogs. But if, as a result of the urge, the margin between hog prices and products prices becomes wider than normal with possibility of increased profits, each packer usually seeks to increase his part of this profit by buying more hogs. As a result of the pull of these various influences, the number of hogs bought and the price to be paid is finally established. These decisions of many packers, reacting to these various influences, finally establish the short-time level of hog prices, and these decisions constitute what is commonly called competition for hogs.

EXTENT OF COMPETITION

This competition is not confined to any particular point or group of points but, generally speaking, is working wherever hogs are processed for wholesale distribution. It is most obvious in areas where hog production is large and packing plants are numerous. It is least obvious where hog production is small and where the movement into commercial channels is limited. The price level resulting from the competition is evidenced by the published quotations on hogs at many points, mostly stockyard markets. But the competition that results in these quoted prices is not confined to any one market or group of markets, but it is at work constantly wherever hogs are bought for commercial processing.

Thus, although there are price quotations at many widely scattered points, such as Buffalo and Chicago and Denver and Los Angeles, the general level of prices at these points is not determined by the competition of buyers for the supplies at these points, nor by the haggling between buyers and sellers. These markets are simply the registering points for the results of this competition that is Nation-wide, and the relative effects of buying and selling at these points on the price level of hogs are only about in the proportion that the numbers bought are to the total bought.

PUBLIC MARKETS AS PRICE REGISTERING POINTS

It is true that certain of these markets have been considered by some as "basic markets", the most important of these being Chicago. But Chicago is not a basic market in the sense that hog values for the country are determined there. It is such a market, partly because its position in the transportation system and in the current of livestock traffic is such that prices at other points in the surplus-hog area can be most readily related to it, partly because it is the location of the principal organized market where hog products are traded in for both spot and future delivery, and partly because the general buying instructions for all the plants of the large national packers emanate from there. It is therefore the most important center for market information registering changes in the level of hog prices. This level is determined by broad forces of supply and demand discussed elsewhere in this report. The fact that Chicago is the most important registering point of hog prices does not make it the determinant of the level of hog prices.

Admittedly the observable indications of competition are most in evidence where large groups of buyers and sellers meet and haggle over the price to be paid, and undoubtedly there are occasions when this haggling affects temporarily the trend of prices, but these markets are individually price-registering and not price-determining points. If there were no such organized trading points where representatives of buyers and sellers meet and sell large numbers of hogs on inspection, and if all hogs moved direct to packers, there would undoubtedly be basic price-registering points, and the level of hog prices to packers would be substantially the same as they are under the present system. There might be less hour-to-hour and day-to-day and even week-to-week fluctuations than now prevail at present markets, but this would not change the level of hog prices. For the primary factors in determining the price level of hogs are the present and prospective wholesale values of hog products and the competition among buyers for the available supply of hogs to be converted into these products. These are factors over which neither individual producers nor sales representatives of producers have any control.

PRICE DETERMINATION OF OTHER PRODUCTS

There are other important agricultural products, with widely distributed production, which move from surplus-production areas to large consuming centers, much as do hogs, but for which there are no established markets similar to the large stockyards markets. Among these are butterfat and poultry.

Butterfat.—Because of its character butterfat must be processed near the point of production although in the "concentrator" areas it

is moved fairly long distances. Hence commercial-butter supplies are manufactured in many relatively small units, and butter from these creameries is widely distributed. Butterfat is sold by producers either directly to local creameries or to produce houses which are agents for large centralized creameries or are independent buyers with several competing outlets. The price paid for butterfat is determined by the price of butter at large consuming centers. There are no large butter markets, however, to which relatively large proportions of creamery-butter supplies are consigned for sale on buyer's inspection, although there are important produce markets in all large cities through which supplies of butter are distributed, and there are organized exchanges where butter is sold for spot and future delivery. As with hog products, prices of butter are determined largely by present and probable future supplies and by the level of consumer incomes. Methods by which butterfat is marketed have no effect on these price-determining factors. Daily butter prices are prices that will remove the supply offered from the market either for immediate use or for storage. There are a number of important price-registering markets which tend to be price-basing markets for the industry, but the level of butter prices is not determined at these markets; it is determined by the Nation-wide demand in relation to the supply.

Poultry.—Poultry as a material for human food is similar to hogs, and production is even more widespread than is that of hogs. But marketing methods are quite different. Excepting at New York City and Chicago, there are no large central poultry markets to which live poultry is consigned by producers for sale, nor except at Chicago are there organized poultry exchanges. Poultry is largely sold by producers to local produce buyers, or delivered direct to produce houses, or sold to itinerant buyers. Local and itinerant buyers are either agents for nearby produce houses, or they ship to produce merchants in more distant consumer markets. These merchants either buy live poultry from country buyers on bids or handle it on consignment. Live poultry shipped to consuming points is largely consumed at the points where received. Local produce houses are much like interior hog-packing plants. Most of the commercial supplies of dressed poultry are produced at these plants, and such dressed poultry is widely distributed by the same methods and to a large extent by the same organizations that distribute pork products.

The general level of poultry prices is determined largely by supplies, the prices of competing products, and the level of consumer incomes. Short-period prices are those at which supplies offered can be moved into consumption or to storage. To some extent, however, live-poultry prices are more localized than are prices of dressed poultry. Prices paid for poultry by local produce houses and at country-buying points reflect prices as quoted at produce markets in large consuming centers. Poultry prices at produce houses and at country points are subject to fewer day-to-day fluctuations than are hog prices, although there is sharp competition for supplies in the areas of large production.

VALUE OF PUBLIC LIVESTOCK MARKETS

These descriptions of the marketing methods for other products similar to hogs are given to indicate that the existence of large consignment markets is not necessary for establishing the price level of

such products and to show that methods of marketing have little influence on the general market level of prices for such products.

It does not follow from this, however, that these organized livestock markets where hog prices are registered do not have an important place in the livestock-marketing system. Such markets, where actual prices being paid can be readily ascertained and given quick and widespread publicity, are of undoubted value to livestock producers. They tend to hold all markets in close line with the general price level and to keep producers and local marketing agencies informed as to whether prices offered by local buyers, by interior packers, or at different public markets are comparable. Large numbers of different weights and qualities of hogs are assembled at these markets where slaughterers in deficit-producing areas can obtain the kind of hogs they want. Such markets are especially useful in the cattle industry since the classes and grades of cattle are so numerous and varied and the wants of different kinds of buyers are so different that cattle must be sold largely on inspection.

EFFECT OF CHANGES IN MARKETING METHODS ON HOG PRICES

It it be accepted that the general level of hog-products prices is not affected by the methods by which hogs are marketed, is it not possible that changes in these methods may affect the proportion of this price that goes to hog producers? In other words, is the margin between hog-products prices and the prices received by farmers for live hogs likely to be increased by changes in methods of marketing hogs? The answer to this question involves a determination (1) of whether these changes have resulted in an increase in the actual costs to the farmer of moving hogs from farms to packers and (2) whether they have reduced packer competition for hogs so that packers are able to widen the margin between hog prices and products prices to cover either increased distribution costs or profits.

THREE IMPORTANT CHANGES IN METHODS

During recent years the three notable changes in these methods have been the shift from rail transportation to truck transportation, the rapid growth of local auction markets to which hogs are brought for sale to buyers of all kinds, and the decrease in the proportion of hogs slaughtered that are consigned to stockyards markets for sale and a corresponding increase in the proportion bought by interior packers and by large local concentration markets for shipment direct to packers located at stockyards markets or elsewhere.

As regards all three of these changes it may be observed that when new methods of merchandising or marketing have tended to replace old, and this tendency grows over a period of years, it is fair to assume that the new methods have certain distinct advantages over the old that cause increasingly larger numbers of persons to adopt these new methods. In the case of marketing methods these advantages may be in saving of time, in reducing risks, in convenience, in reduced costs, or in increased returns.

Motor-truck transportation.—The shift from rail to motor-truck transportation has apparently been only indirectly a factor in causing the increase in direct marketing since the proportion of livestock moved by trucks has increased as rapidly at stockyards markets as

at interior packing plants or concentration yards. Although there is difference of opinion as to whether it has reduced actual out-of-pocket costs in most cases, there seems little doubt but that it has materially saved time and reduced risks and is often much more convenient.

The increase in commercial trucking of hogs apparently tended to increase the number of local selling outlets, since many of these truckers have become buyers on their own account, as well as transportation agencies. This has brought the hog market direct to the farmer's door and relieved him of all the work involved in getting hogs to local railroad points. To the extent that the trucker pays the same price at the farm that the local dealer does at the railroad, it has reduced labor cost but not out-of-pocket cost if the farmer can deliver the hogs to the local dealer without cash expense.

The increase in trucking also has increased the number of large-scale outlets in many cases. Since motor trucks are not restricted as to routes, as are railroads, many communities that were formerly limited to the market outlets readily reached by the available railroad facilities now have additional outlets because these communities can be reached directly by trucks or because loading points on railroads going direct to these points can be reached at little or no added cost of local haul.

Since there is no apparent direct effect of increase in trucking upon the degree of packer competition for hogs and since it has not added to marketing costs, and since it has had other advantages, this changed market method has not tended to reduce the proportion of the wholesale value of hog products paid to producers for hogs.

Local auction markets.—Local auction sales where large numbers of hogs as well as other livestock are assembled and sold have increased rapidly in many Corn Belt States during the last few years and especially during 1934. To a considerable extent these periodic sales have tended to replace farm auction sales. In general the livestock sold is made up of young or unfinished animals or breeding stock, and few fat cattle or hogs are included. During the last 2 years many stock pigs have been distributed in this way.

Such method of sale in general does not appear to offer additional advantages for the marketing of slaughter hogs in areas of large production and may have some disadvantages. In sections where hog production is on a considerable scale and there are a number of local buyers or nearby outlets for hogs it hardly seems probable that the prices paid at the auction will be any higher than those offered elsewhere, and costs of getting hogs to the buyer and market risks will be increased. In sections, however, where hogs are produced on a limited scale and local buyers are few or lacking the assembling of hogs in large enough numbers to attract outside buyers can prove and has proved to be distinctly beneficial. Since these sales can have no effect on general packer competition for hogs their utility must be judged largely by local conditions.

Growth of direct marketing.—The third change in marketing methods is the decreased proportion of slaughter hogs consigned for sale at stockyards markets and the corresponding increase in direct marketings. Under another section are discussed the relative costs of marketing hogs sold at public stockyards and sold direct to packers or packer-buying points. This discussion indicates that direct selling

has tended to decrease rather than increase marketing costs; thus of itself it would tend to increase the proportion of the packer's price received by farmers.

Hence it appears that the shift to direct marketing has been advantageous to producers, unless this shift has resulted in a decrease in packer competition for hogs and an increase in the margin between the price level of hog products and the level of hog prices to packers that more than offsets this decrease in marketing costs. Whether there has been such a decrease in competition is the crux of the question as to whether direct marketing has been beneficial or detrimental to hog producers. It is desirable, therefore, to examine the whole question of packer competition for hogs both at public markets and at interior points to determine whether it is probable that a shift of buying from the former to the latter would tend to reduce this competition and make it possible for packers to widen the margin between the prices of hog products and of hogs.

The conclusion was reached earlier in this section that the general price level of hogs is not determined at any one market or group of markets but that it arises from a Nation-wide competition of packers, wherever located, and that the results of this competition are registered in changing daily, weekly, and monthly prices at different markets. But it does not follow that the degree of competition could not be altered by marked shifts in the channels through which hogs are moved from producers to packers.

CHARACTER OF COMPETITION AT PUBLIC MARKETS

There is a material difference among public markets in the character of the competition for the hogs received. At some markets there are 3 general types of buying for slaughter, at others only 2, and at some only 1. At markets where there are 3 types of buying there are buyers for some or all of the four national packers, some of whom have plants located at most important stockyards markets, buyers for local packers who have plants only at this market, and shipper-buyers who buy hogs on order from packers located elsewhere. The Chicago market is typical of this kind of market. At markets where there are 2 types of buying there are buyers either for national packers or for independent packers, one or the other of which types—but not both—have plants located at these points, and shipper buyers. The South St. Paul market is of this type. The 1-buyer type markets are those where one packer (either national or local) takes the bulk of the supply and at which few, if any, hogs are bought by shipper buyers. These markets are relatively small and are located usually in deficit-production areas and mostly in States on either the Atlantic or the Pacific coast.

Obviously competition seems greatest at markets where there are numerous buyers. A commission salesman who has a number of buyers with whom he can dicker before selling would appear to have a better chance of getting a higher price than when he has only a limited number and in some markets only one. At markets where there are many buyers it doubtless often seems that a good salesman may get the better of a buyer and sell hogs above the market, but the reverse also occurs, and the result of such sales on the average market price is negligible. But since the value of hogs for slaughter is determined by the value of hog products and since all packers are selling

products in much the same market it is not to be expected that for any length of time hogs will be bought at prices out of line with product values. Hence a large number of buyers at a given market of itself offers little possibility of keeping hog prices at that market high relative to other markets. If this were not so there would be a tendency for hogs to move to the markets where buyers were most numerous and away from other markets. As a matter of fact the fluctuations in the differentials between markets is kept small.

It might be argued (and has been) that the markets at which there are numerous buyers of all kinds set the price pace for all other markets—that they establish the level of prices, and other markets simply follow. The Chicago market, especially, has been often cited as the price-determining point. Undoubtedly the day-to-day changes in hog prices at Chicago are an important element in influencing buyer and seller attitude at other livestock markets and at other points where hogs are bought for slaughter. The reasons have been pointed out elsewhere.

To the extent that some of the four national packers are important or dominating buyers at different stockyards markets it is to be expected that those markets will be affected by the buying policies of these packers as reflected in market reports from Chicago. For this reason a somewhat detailed consideration of the competitive buying situation at Chicago may be useful.

Competition for hogs at Chicago public market.—Three of the four large national packers have plants at the Union Stock Yards in Chicago and buy a considerable part of their hog supplies on that market. They also bring to these plants relatively large numbers of hogs bought at country points, and the proportion of such hogs to the total handled at Chicago has been increasing during recent years. There are a number of fairly large local packers having plants at the stockyards who usually buy all of their hogs on the market. A fairly large proportion of the Chicago market receipts are bought by order buyers for shipment to packers at other points, nearly all of these hogs moving east of Chicago, and these order buyers operate regularly on the market. In addition, relatively large numbers of speculative buyers are regular operators on the market. These speculators largely buy loads of mixed hogs for sorting and odd lots of hogs to be assembled into larger lots. When they think the market is likely to advance during the day or if they are offered hogs at a price that seems attractive, they also buy hogs to be resold without sorting.

Usually buyers for local packers, order buyers, and speculative buyers are the first on the market, and their bids tend to establish the early trend of prices as compared with those prevailing at the close of the previous day. The first two types of buyers usually want hogs of fairly definite weights and grades and are not interested in mixed lots, and their bids are mostly for the better grades of butcher hogs of most weights. The early operations of speculative buyers are governed to a considerable extent by their forecast of how the day's market may develop, based on receipts, attitudes of small local packers and order buyers, large packer attitude the previous day, conditions in the provision markets, etc.

The orders received by order buyers are usually to buy specific kinds of hogs at a price not to exceed a set price limit. In establishing their price limits the eastern packers who place these orders are

governed by conditions in the wholesale pork market, especially by the demand for fresh pork, the relative prices of hogs at different markets the previous day, changes in quotations in the futures provision market, and other facts tending to indicate what hogs are worth and where they are the cheapest.

Instructions to small local packer buyers represent the management's judgments as to what hogs are worth, based on about the same kind of information as that influencing eastern packers but usually with more intimate knowledge of conditions in the speculative provision market and in the country-wide situation. As these buyers go through the hog alleys and make offers on the kind of hogs suitable to them, commission salesmen get their cues as to how the market is likely to go, and they either sell or hold for higher prices. Thus the early trend of the market is established.

Later the national packer buyers come into the market with instructions as to how hogs should be bought. These instructions are based on information coming from branch houses at all wholesale meat markets in all the leading consumer centers as to the previous day's business and opening conditions of the current day, on conditions in the futures provision market, on the day's supplies of hogs at leading markets and the cumulative supply for the week, on the "cut-out" of hogs slaughtered in recent days, on purchases and prices at country buying points the previous day, and on the attitude of each organization toward the future trend of hog-products prices. If these instructions are in substantial agreement with the early trend of prices that trend will dominate the day's market; if they are contrary to this opening trend then the later trend is likely to be different from the opening if the day's receipts are to be cleaned up.

Obviously all buyers who are on the market try to buy hogs as cheaply as they can regardless of what their instructions are. But it soon becomes apparent what the general attitude of the buying side is, and the market usually quickly adjusts itself to this attitude. The urge to buy as cheaply as possible, however, is less prevalent with order buyers than with packer buyers. Order buyers are paid a commission for buying, and the ordering packer is not in close touch with the market. If orders can be filled within the price limit set, the buyer has no immediate incentive to buy below this price. But since his business depends on future orders coming to his market and to him, the better he can serve his client the better he insures future business.

Position of salesmen in the market.—Confronting these different kinds of buyers in the market are a large number of hog salesmen representing the commission firms to whom the supply of hogs for sale has been consigned. There is a wide variation among these salesmen in the number of hogs they have for sale, and there is no agreed policy among them as to what the trend of prices of hogs should be. They are paid a commission for their services which is unrelated to the price at which hogs are sold. Hence they have no actual interest, as salesmen, in the price level of hogs. Their chief concern is to sell the hogs consigned to them in line with the market so that their customers will be satisfied. Undoubtedly their attitude is to get the best price they can, but they are faced with conflicting situations. When the first buyers make their appearance they must have decided what their offering price shall be and then must reach

a conclusion from the first bids as to how the day's market will develop, and whether to sell at once or await later developments. Not all salesmen reach the same conclusions and first sales may be below what most salesmen have had in mind as obtainable. The rest then have to decide whether these first sales were too low and hold for higher prices or revise their own ideas of prices obtainable. Out of the various decisions of individual salesmen develops the trend of the market.

It is to be noted, however, that the position of the selling side is relatively weak compared with the buying side. It is not probable that packers will pay for hogs more than they expect to get for the products after deducting processing and other costs. It is true that at certain times packers' judgments as to the future value of hog products to be cured and stored will be such that they will pay somewhat more than the cut-out value based on current prices of products, but over the greater part of the crop season these current prices are much the more important factor in determining what hogs are worth. On the other hand, having been produced and delivered at the market, hogs must be sold, and there are no corresponding factors setting a lower limit below which hogs will not be sold. Hence, commission salesman, having no ownership interest in the product, usually will not risk having to carry hogs over from day to day in an effort to raise the level of hog prices.

The most that salesmen can do is to sense the change in demand for hogs from the attitude of buyers in the market and adjust asking prices to this changing demand. Actually the price level of hogs is determined by the competition of packers for the available supply offered, and the desire of producers or efforts of salesmen have practically no effect on the price level. Salesmen can bring about short-time fluctuation around the price level however, by taking advantage of changing volumes of receipts and by bringing into play an expanding demand for hogs somewhat sooner than it might otherwise become effective. The position of salesmen is fairly similar to that of an auctioneer at a public sale. The auctioneer, if a sale must be made, cannot control the prices of the things he sells. The estimated value to buyers is what sets the price. But he can at times take advantage of the competitive attitude of different buyers to get a higher price than would have been paid if he had not been able to stimulate this latent competition.

COMPETITION FOR HOGS BOUGHT DIRECT

Competition among packers for hogs bought direct from producers or producing areas is not visibly manifest as is the competition among packer buyers at public markets where a number of buyers for different packers are all operating in the same way in the same place at the same time. The fact that this competition is not thus manifest does not justify a conclusion that it does not exist or is less effective in its results on the prices received by producers for hogs than is packers' competition at the public markets.

One marked difference between packer competition at public markets and at interior points is that at public markets this competition is for a supply of hogs that is physically present and largely out of the control of the producer, while at interior points it is competition in drawing hogs from producers to different plants. The first

is a competition to buy hogs that must be sold; the second is a competition to draw hogs that may or may not be sold, depending on the prices offered.

Types of large-scale country buying.—In general there are three types of large-scale country buying. The first is that on the part of interior packers, who buy hogs delivered at their plants from producers, or from local buyers or shipping associations who assemble hogs, or from truckers who buy hogs from producers; or they may also have concentration or buying points located elsewhere where hogs are bought from the same sources and at which delivery is made. The second type of buyers are those for packers located at public markets (or at points so far removed from the area of production that the hogs must be moved by rail) who have established buying yards at which hogs are received. Purchases are made from the same groups of sellers as are those of interior packers. The third type of buyers are the operators of independent concentration yards or assembly plants who buy hogs for their own account and resell them where they can get the highest prices, either consigning them to public markets or selling to packers variously located, at the highest price obtainable. A variant of the third type is found in cooperatively operated concentration points that receive hogs from shipping associations, sort and sell at the most advantageous point, and charge a fee for the service.

With each of these three types the hogs are bought at a fixed delivered price and are delivered to this point. Another type of buying is buying on track, where car lots of hogs are bought at the point of shipment and moved on order to packing plants without passing through concentration yards. Such buying is done by packer buyers at concentration yards and by independent buyers.

Evidences of competition at country buying points.—The competition among these large-scale country buyers is evidenced by the prices offered by them for hogs. These offers are bids for hogs to be delivered, or board prices (with adjustments) for hogs delivered without a bid price being first received. These prices reflect not only the competition among these buyers operating in a given area but also the competition between buyers in this area and public markets available to the area. In order to attract the number of hogs he requires, each buyer must offer a price that is at least as advantageous as prices offered by other direct buyers in the area, and the level of prices in the area of all buyers must be high enough to keep the hogs from going to public markets.

In the case of independent interior packers the prices they can pay for hogs are based upon the prices they are obtaining currently for hog products in relation to their respective operating costs, influenced somewhat by their forecasts of future prices for products to be cured or stored. The prices they do pay are such as they expect will bring them the desired number of hogs, but these prices will not exceed for any considerable period the prices they can pay. Buying policies of interior packing plants owned by large national packers, since general buying policy is controlled more or less by the central buying department, doubtless reflect the country-wide product-price situation more nearly than do those of independent packers whose distribution is more localized. But since the market for products tends to be countrywide, owing to the facility with which such products

can be moved long distances, all interior packers, except those whose business is entirely local or intra-State, are selling in much the same general market as are national packers.

Prices paid at packer-controlled concentration yards are such as must be paid within their respective areas to bring to them the volume of hogs desired. Buying at such points maintained by large national packers may be influenced by other conditions than the actual worth of the hogs as measured by the value of products. These points might be maintained in order to establish a relatively high level of hog prices in certain areas to counteract competitive advantages of other kinds that interior packers in this area may have. To maintain such a level of prices the hogs bought might be processed at smaller profit margins or without profit, but with compensating advantages from operations elsewhere.

If interior packers, because of the freight-rate relationship between live hogs and hog products, or because of smaller operating costs resulting from lower levels of wages and salaries, were able to process hogs and distribute hog products to eastern consumer markets at a lower cost than could packers located at some public markets, these advantages could be reflected either in a relatively large operating profit or in an advantageous selling position for distributing an increased output.

Packers with plants less advantageously located might meet this situation in several ways. They might abandon these plants and establish or acquire plants in the advantageous area; they might attempt to draw hogs to the public market or markets, the volume of which had been most seriously affected by the increase in slaughter at interior packing plants, by bidding up prices at these particular markets; or they might buy hogs direct at relatively high prices in those areas and thus improve their competitive situation in distributing markets as well as increase their volume of slaughter. The competitive situation as above outlined apparently did prevail in the post-war period, and the national packers have attempted to meet it by the first and third methods indicated.

The third type of large-scale country buying, that by operators of independent concentration yards or buying points, is to a considerable extent speculative buying. These operators buy hogs of mixed grades, both car lots and truck lots, sort them into uniform grades, and sell these graded lots on offers direct to packers variously located, but mostly east of Chicago. What they cannot sell direct they consign to the public markets that they consider the best outlets for different weights and grades of hogs. To some extent, however, they buy on orders by first asking for bids on certain grades of hogs and then buying hogs to fill these orders, if they can do so and make a profit. Often in doing this they buy mixed hogs and sort them to get the number of the grades desired and then consign the remainder to public markets, in which case the final outcome of the operation depends on the returns from the hogs thus consigned. When such yards are operated cooperatively or as a part of a cooperative selling organization and a fee is charged, the operators are not country buyers but only an expanded type of shipping association.

The prices that such operators pay are not influenced directly by the value of hog products. The operators buy hogs as cheaply as they can in competition with other large-scale country buyers in order to

resell, either after sorting or without sorting. Their operations are comparable, in part, with those of speculative buyers at public markets and in part with those of local country buyers who buy hogs within a limited area for resale or consignment.

In areas where two or more of these three types of large-scale country buying prevail the competition among them is plainly evident in the efforts they make to obtain hogs. This evidence is not that of buyers in person actually bidding against each other for different lots of hogs, but is in the form of quoted and posted prices which they will pay for hogs delivered to them. Sellers of hogs, whether shipping associations, local country buyers, or producers, can negotiate directly with all of them, and compare the highest price offered with the quoted prices at available public markets and then make what appears to be the most advantageous disposition.

In areas in which only one such country buyer operates, sellers of hogs have only the choice of accepting this one bid or shipping to a public market. Over the greater part of the heavy hog-producing areas of the Corn Belt two or more such buyer outlets are available. In the less intensive production areas only one such buyer may be found, and often such areas are far removed from public markets. Few producers ever have enough hogs to sell at one time to make a carload, or even a truck load, and the total yearly volume of shipments is not sufficient to justify the regular operations of a local dealer or shipping association. Producers, of necessity, must accept such bids as may be made, but this situation is not less advantageous because of the presence of this buyer than it would be if he were not operating.

The foregoing description of the character of competition at these various types of large-scale markets leads to the conclusion that the basic factors determining and limiting the competition are the same at all of them; hence is little affected by changes in the proportion of the hog supply that moves through each. On the side of the packer buyers the upper limits of the prices they will pay over any considerable period are set by the composite value of the products derived from hog slaughter minus the charges for processing and distributing these products. Since there is this upper limit to the prices that will be paid and there are no corresponding cost factors setting a limit below which hogs will not be sold, the position of the seller is relatively weak as compared with that of the buyer, and it is the weakest when large supplies of hogs are for sale that are largely out of the control of the sellers.

COMPETITION AT COUNTRY POINTS

Thus far the discussion of competition has been largely devoted to competition among different types of markets and buyers at or for these markets, but there is another type of competition which is more in evidence to most producers of hogs. This is the competition at local buying points which reflects this larger competition to farmers with hogs to sell.

Alternative selling methods.—Hog producers with hogs to sell in general have two alternatives: either they can sell at a price known before the hogs are delivered or they can consign their hogs and take whatever price may be received at the point where the hogs are sold minus costs of shipping and marketing. Sales to local buyers, to interior packers, and to concentration points are of the first type;

shipment to public markets and through shipping associations are of the second type. So far as the individual producer is concerned, his preference as between public markets and direct selling is reflected in his choice between consignment to a public market for his own account or sale by himself to an interior packer or to a concentration point operated by a packer. Since local country buyers, including truckers, shipping associations, and independent concentration points, all can and many of them do utilize both kinds of outlets, the producer selling to these cannot know what will be the ultimate market destination of his hogs.

The rapid growth of motor-truck transportation has increased materially the range of choice among markets of individual producers. When most of the supply of hogs moved by rail generally, producers with less than a carload of hogs were limited to a choice of two outlets—they could sell to a local country buyer or they could ship through a shipping association. At the present time they can send truck or less-than-truck loads of hogs for sale on their own accounts to a public market, to interior packers, or to concentration points. More than ever before, producers are in a position to decide what type of selling they prefer.

Factors influencing farmers' choice of outlets.—Decisions among these different available outlets are influenced by a variety of considerations. The most important is whether hogs will net more a day or two later at a public market than the offered prices for them by any one of the several outlets from which offers are requested. The price at the public market may be either up or down by the time the hogs can be delivered there for sale, and the producer must take the risk of the decline. If different producers had hogs for sale at frequent intervals during the year, it is probable that the number of times the market would go down in the interim between the time when arrangements for shipment were made and the time when the hogs were sold would be offset by the number of times the market advanced. But with producers who sell hogs only a few times in the year, there is no certainty of such offsets. Hence the seasonal trend of prices may affect decisions. During the periods of seasonal declines, sales at a known price would be preferable, but during the periods of seasonal advances a better change of profiting by the market change would be offered by consignment.

But even though the farmer were willing to take the chance of the market fluctuation, he may still prefer to sell at the offered price because it may be high relative to what the public-market price is at the time; also because he cannot tell in advance of the sale the exact price his hogs would bring on the market. Likewise farmers who sell hogs only at infrequent intervals do not have the data needed to determine what the net price from consignment may be, since from the market price must be deducted the costs of transportation and marketing and the loss from shrinkage; while from the offered price only transportation and shrinkage would have to be considered, or shrinkage alone if the sale were at a nearby point where he could make delivery himself, or neither of these if sale were made to a trucker at the farm. Hence, undoubtedly, farmers who sell infrequently usually prefer to sell at a known price.

Distance from a public market is also a consideration. Farmers who are located within a short trucking distance of such a market,

where the transportation cost is relatively small, will tend to consign to the market more generally than will farmers located a considerable distance away. The nearby farmers are more familiar with the public market and have more direct contacts with it and can get their hogs to it quicker. Also direction from a public market is doubtless of material influence. The general movement of hogs over most of the Corn Belt is from west to east, and price differentials between markets are from east to west. Hence, a farmer whose closest public market is 75 miles or more to the west would be moving his hogs against the current of hog traffic if he shipped to the market, while if the market were to the east he would be moving with the traffic. Hogs are trucked much farther if the movement is east than if the movement is west.

Some farmers, doubtless, are influenced in their choice of an outlet by their attitude toward direct marketing. If they believe that direct marketing is detrimental to the whole marketing system, they may consistently consign to a public market or through a shipping association that consistently consigns, or they may sell to a public-market trucker, and make little use of large-scale direct outlets.

The convenient availability of different outlets is doubtless one of the most important factors in most farmers' decisions. This brings up the question as to whether the recent changes in marketing methods have tended to increase or decrease the number of outlets generally available. As previously indicated, there can be no doubt but that the shift from rail to motor-truck transportation has tended to increase the number of outlets conveniently available in the principal hog-producing areas. To the extent that the growth of direct marketing has resulted from or has been accompanied by an increase in the number of interior packers and concentration points, with no resulting decrease in public markets, undoubtedly the number of large-scale outlets has been increased. Since none of the large or intermediate-sized public markets in the Corn Belt and few if any elsewhere have ceased operations within the last decade, there has been an increase in these large-scale outlets.

CHANGES IN NUMBER OF LOCAL OUTLETS

There is little available information to indicate whether there has been a change in the total number of local outlets (country buyers and shipping associations). There has been a rather sharp decrease in the number of shipping associations during the last 5 years and this decrease has been most marked in the areas where large-scale country buying has shown the greatest increase. During the period 1916-25 when cooperative shipping associations were increasing rapidly in number there was undoubtedly a material decrease in the number of local hog buyers. Whether that number has tended to increase with the decline in the number of shipping associations cannot be determined from any available information.

The decrease in the number of shipping associations has resulted, to a large extent, from the increase in truck transportation. In areas within a short trucking distance of a public market the necessity for consolidating small lots of hogs into car lots has been eliminated, and this function of the shipping association has disappeared. To the extent that farmers used shipping associations to reduce local buyers' margins, this is now done by direct delivery at the public market.

The growth of direct marketing may also have been a factor in the decline in the number and in the average volume of business of shipping associations. Prior to about 1926 most shipping associations consigned their hogs to public markets, and were slow to avail themselves of the direct-market outlets. Hence as the volume of hogs going to these direct markets increased the volume available to the shipping associations declined.

As motor-truck transportation expanded, commercial truckers more and more became hog buyers both on their own account and as agents or preferred buyers for interior packers and concentration yards. The increase in the number of such buyers has probably more than offset the certain decrease in the number of shipping associations and any probable decrease in local country-point buyers.

In the principal hog-producing areas there has never been any lack of local outlets for hogs. One of the leading causes of the growth of shipping associations was the belief that there were too many country buyers, who were being supported by their profits from handling livestock, principally hogs. As shipping associations increased, the total number of these intermediary marketing agencies doubtless declined; and as shipping associations, in turn, have declined, their operations have been taken over partly by truck buyers, but largely by farmers who have dispensed with any intermediary because of available motor-truck transportation.

Number of all market outlets.—Although there are no available data indicating exactly whether the number of all market outlets has changed during the past decade during which direct buying has expanded greatly, there is information as to the number of such outlets available at the present time.

Hog producers who signed contracts under the hog-production control program of the Agricultural Adjustment Administration were required to furnish evidence as to the disposals of the 1932 and 1933 pigs raised by them, in establishing their base-production figures. These "supporting-evidence" records include the names of the buyers in addition to the dates and the number sold. To get information as to how these pigs were disposed of, typical counties in the nine most important Corn Belt hog-producing States and in Kentucky were selected. A number of factors were considered in selecting these counties, such as types of farming, volume of hog production, location of public markets, location of other large-scale markets such as interior packing plants and concentration yards, and location within areas concerning which the question of the competitive situation had been raised.

One or two counties were selected in each State except in Iowa, where four counties were selected. A sample of the contract farmers well distributed over the county was taken in all counties. In some States all the data for one township in each county were recorded and sample data for other townships, and the record shown in table 26, covers over 5,000 producers in 197 townships in 18 counties, and the sales record covers over 500,000 hogs. The agencies to which or through which sales were made were listed, and these were separated into different types such as public market, packing plant, concentration yards, public auction, local buyer, shipping association, and miscellaneous.

TABLE 26.—*Producers and agencies buying hogs in selected townships in representative counties in principal Corn Belt States and in Kentucky*

State	Counties	Townships	Producers	Hogs	Agencies buying ¹
	Number	Number	Number	Number	Number
Ohio.....	2	2	212	36, 144	431
Indiana.....	2	26	537	89, 969	1, 102
Illinois.....	2	21	401	47, 448	998
Minnesota.....	2	15	324	33, 059	676
Iowa.....	4	57	1, 838	196, 645	3, 195
Missouri.....	1	8	617	17, 994	1, 319
South Dakota.....	1	16	242	24, 066	463
Nebraska.....	2	26	423	50, 758	882
Kansas.....	1	25	300	19, 919	807
Kentucky.....	1	1	111	12, 273	344
Total.....	18	197	5, 005	528, 275	-----

¹ Includes all the buyers of any kind who bought hogs from producers. Each figure is the sum of township totals without the elimination of duplications.

Compiled from records of the Agricultural Adjustment Administration.

As finally tabulated the number of hogs disposed of through these various agencies by townships were obtained, and for each township the percentage handled by each of the five leading agencies, classified as to type in order of importance, was computed (table 66). It was found that a relatively large number of hogs in all areas were sold by producing farmers to other than the principal agencies listed. This included a large number sold from one farmer to another and considerable numbers sold to town butchers and other town residents either for slaughter or taken on account by merchants and professional men. Since these supporting-evidence records did not include disposition of hogs other than those raised by the producer himself (or at least they were not supposed to), they do not show the final disposition of the hogs sold from one farmer to another, but it is fairly assumable that these hogs were disposed of through about the same agencies as were the hogs the farmer raised. Doubtless many of the hogs taken on account were afterwards sold to local buyers, except when delivery was of dressed hogs.

These records show that a number of agencies were utilized for the disposal of hogs in all townships in all counties and that in very few of them (37 out of 197) did any one agency handle over 50 percent of the hogs. In the 37 townships where over 50 percent was handled by one agency these agencies were local buyers in 15 townships, packing plants in 18 townships, concentration yards in 2 townships, auctions in 1 township, and public markets in 1 township.

In general these records agree with the reports of individual farmers made direct to the United States Department of Agriculture, showing the number of market outlets used by them in marketing their hogs. The producer was asked to state the number of public stockyards, packing plants, concentration yards and buying stations, local livestock buyers, auction markets, and cooperative shipping associations through which he could conveniently sell hogs, the object being to get some idea of the number of outlets available to the producer and some indication as to the local competition for his hogs. The answers to this question are shown by States and areas in table 27. In the Corn Belt the number of market outlets per reporting producer averaged 4.0 and in the three States outside the Corn Belt the number averaged 3.3. The highest average number of out-

lets for individual States were in Indiana, Ohio, and Iowa, and the lowest average number in Oklahoma, Tennessee, and Kentucky. From 1 to 5 market outlets were reported by slightly more than 75 percent of the farmers in each of the three Corn Belt areas and by 85 percent outside the Corn Belt. About 1 percent of the farmers reported 16 or more available outlets.

TABLE 27.—*Number and percentage of farmers reporting various numbers of available outlets, by States and areas, 1934*

State and area	1-5 outlets		6-10 outlets		11-15 outlets		16-20 outlets		21 outlets and over		Average number outlets
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	
Eastern Corn Belt:											
Wisconsin.....	396	84.3	61	13.0	11	2.3	2	0.4			3.6
Michigan.....	231	79.7	52	17.9	6	2.1	1	.3			3.8
Illinois.....	918	79.6	194	16.8	33	2.9	6	.5	2	0.2	3.8
Indiana.....	598	71.1	184	21.9	48	5.7	9	1.1	2	.2	4.6
Ohio.....	585	72.4	165	20.4	41	5.1	12	1.5	5	.6	4.6
Total.....	2,728	76.6	656	18.4	139	3.9	30	.8	9	.3	4.1
Northwestern Corn Belt:											
North Dakota.....	172	86.4	25	12.6	2	1.0					3.4
South Dakota.....	210	75.0	59	21.1	9	3.2	2	.7			4.2
Minnesota.....	393	83.8	68	14.5	6	1.3	1	.2	1	.2	3.5
Iowa.....	724	69.5	255	24.5	52	5.0	8	.8	2	.2	4.6
Nebraska.....	426	80.4	95	17.9	8	1.5			1	.2	3.7
Total.....	1,925	76.4	502	19.9	77	3.1	11	.4	4	.2	4.1
Southwestern Corn Belt:											
Kansas.....	465	77.9	107	17.9	19	3.2	5	.8	1	.2	4.0
Missouri.....	561	76.0	130	17.6	34	4.6	10	1.4	3	.4	4.3
Total.....	1,026	76.9	237	17.7	53	4.0	15	1.1	4	.3	4.1
Outside Corn Belt:											
Oklahoma.....	211	86.1	29	11.9	3	1.2	1	.4	1	.4	3.2
Kentucky.....	196	86.3	24	10.6	4	1.8	2	.9	1	.4	3.3
Tennessee.....	192	83.5	32	13.9	5	2.2	1	.4			3.2
Total.....	599	85.3	85	12.1	12	1.7	4	.6	2	.3	3.3
Total, 15 States.....	6,278	77.3	1,480	18.2	281	3.5	60	.8	19	.2	4.0

This question on number of outlets for hogs was often incompletely answered. Frequently the different types of outlets named in the questionnaires were checked instead of the actual number of available outlets of each type being given; in these cases each type of outlook checked was counted as one outlet. Public stockyards, or other markets which were known to be available in the locality of the reporting producer, were often not even checked. In many instances it was apparent that the number of outlets reported represented the outlets through which the producer customarily sold hogs instead of the number of outlets available. However only the outlets actually reported were tabulated even in cases where it was apparent that all available outlets had not been reported on the questionnaire. Consequently the number of available outlets as presented in table 27 represents an understatement.

CHAPTER 9

HOG-PRICE DIFFERENTIALS BETWEEN MARKETS AND RELATIONSHIPS BETWEEN RECEIPTS AND PRICES AT DIFFERENT MARKETS

It is often stated that prices paid for hogs bought direct are based on fixed differentials above or below prices paid at Chicago, or on fixed differentials above or below prices paid at some other public market which in turn are based on Chicago prices. It seems advisable, at this point, to ascertain the price relationships which are maintained between markets of different types, as well as between markets of the same type. Particular consideration will be given to ascertaining the extent to which prices paid for hogs purchased direct are based on prices paid at Chicago or other public markets. These comparisons must necessarily be limited to markets at which prices are reported on comparable grades of hogs. Such reporting is done by the Federal Market News Service at the more important public markets and at 22 concentration yards and 7 packing plants in Iowa and southern Minnesota. These data will therefore be used in the analysis.

The day-to-day relationships of prices between interior markets and public markets constitute the most important phase of this analysis. But the analysis will be preceded by a brief discussion of the year-to-year, or trend, in price relationships, and the month-to-month, or seasonal, price relationships between markets of different types so as to determine how consistently the price relationships are maintained over longer periods. A similar study was made by the Brookings Institution a few years ago, covering the period 1923-29 (11). The week-to-week price differentials between important public markets which that study included were omitted in the present study since it was found that these relationships were in general of the same character as the day-to-day price relationships.

The analysis is based on the price of medium-weight hogs, since this is the classification of hogs that is most representative at the different markets where the Federal Market News Service is maintained. Prices have been quoted on hogs weighing 200 to 220 pounds, Good to Choice, since July 1930. Prior to this date prices were quoted on 200 to 250 pounds, Medium to Choice hogs. The trend and seasonal analyses of prices at public markets cover the period from 1921 to date, except where it involved markets at which the Federal livestock market reporting service was inaugurated at a later date, in which case the analyses are based on the shorter period. Prices obtained by the Des Moines office from individual packing plants in Iowa and southern Minnesota on hogs of the same grade and weight were used to represent interior markets. As this service was established in July 1930, the period has been too short to justify an analysis of trend and seasonal relationships. Day-to-day price relationships cover the 3-year period 1931-33 for public and interior markets.

TREND IN HOG-PRICE RELATIONSHIPS BETWEEN MARKETS

The relationships of hog prices between different markets may change over a period of year. The trend in the relationship of prices between Chicago and each of the markets, Indianapolis, Cincinnati, ²¹

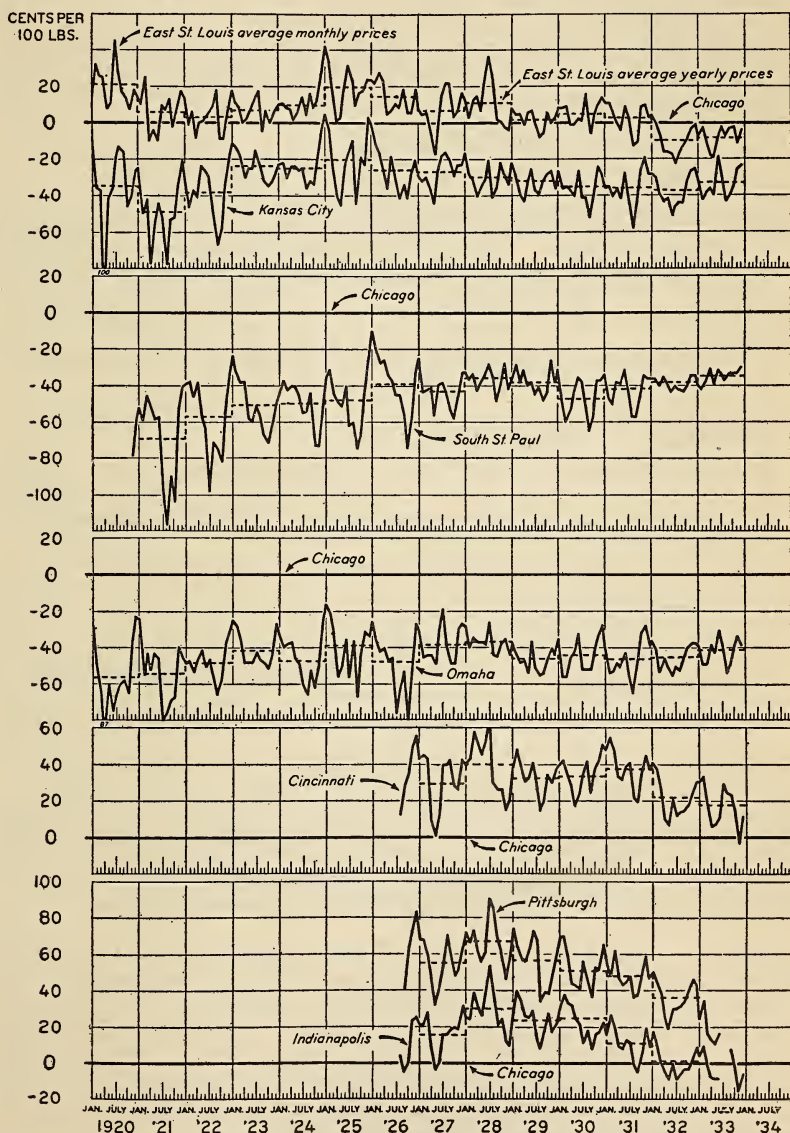


FIGURE 28.—MONTHLY AND YEARLY HOG PRICES; DIFFERENCE BETWEEN CHICAGO AND SEVEN OTHER PUBLIC MARKETS.

Price differentials between Chicago and each of the other public markets compared with it tend to vary from month to month and from year to year. The long-time trends in the price differentials between Chicago and some markets, notably South St. Paul, Cincinnati, Indianapolis, and Pittsburgh, have changed considerably, whereas that between Chicago and Omaha has changed relatively little.

²¹ Federal Market News Service was established at Indianapolis and Cincinnati in August 1926; consequently 1927 is the first full year when comparable data were available. The service was discontinued at Indianapolis during July and August 1933; consequently 1932 is the last full year when comparable prices were available.

Pittsburgh, East St. Louis, Kansas City, Omaha, and South St. Paul, is presented in figure 28. The price relationships between Chicago and other public markets have tended to change to a greater or less degree during the same period, but such changes have not been uniform between the different pairs of markets. Price relationships between individual public markets not including Chicago likewise changed during the same period. Differentials in price may continue to widen or to narrow between two markets over a period of years, whereas between other markets differentials may change from year to year but show no change in the trend.

SEASONAL VARIATION OF PRICE RELATIONSHIPS

Price differentials between markets usually vary from month to month during the year. Variation in such differentials for the different seasons may be a somewhat normal phenomenon. This is es-

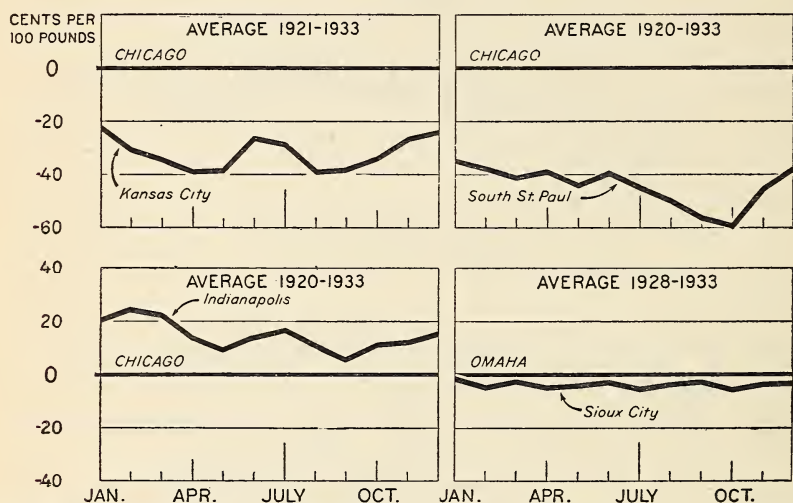


FIGURE 29.—REPRESENTATIVE SEASONAL PRICE DIFFERENTIALS FOR MEDIUM-WEIGHT HOGS BETWEEN CHICAGO AND EACH OF THE MARKETS, INDIANAPOLIS, KANSAS CITY, AND SOUTH ST. PAUL; AND BETWEEN OMAHA AND SIOUX CITY.

The spread between prices of hogs at Chicago and those at some of the other important markets usually varies according to the season of the year, and the seasonal variation is different for different markets. The spread between Sioux City and Omaha prices, however, shows very little seasonal variation.

pecially true when the two markets are located in different areas. Seasonal hog-price differentials between Chicago and each of the markets, Indianapolis, Kansas City, and South St. Paul, and between Omaha and Sioux City, appear in figure 29. There was no apparent seasonal variation between Omaha and Sioux City. The greatest seasonal variation existed between Chicago and South St. Paul. The normal variation in the differentials between Chicago and Indianapolis was less than that between Chicago and Kansas City.

Normal seasonal price differentials may vary because of changing relationships between the supply and demand for hogs of a given grade at different markets from one season to another, or because of changes in the amount of shrinkage in transit or in death risks during different seasons of the year.

DAY-TO-DAY PRICE RELATIONSHIPS

Prices usually fluctuate more frequently at public markets than at interior packing plants, concentration yards, and other points where hogs are marketed direct. The number of consecutive days without price change at each of 11 public markets, most of which are in the Corn Belt, and at 7 packing plants in Iowa and southern Minnesota during the 3 years 1931-33 is shown in table 28. For the 11 public markets the price changed from one day to the next an average of 66 percent of the time, whereas at the 7 interior packing plants in Iowa and southern Minnesota the price changed from day to day an average of 44 percent of the time.²² The maximum number of consecutive days a given price remained unchanged ranged from 3 to 8 at the different public markets, and from 5 to 11 at the different interior packing plants.

TABLE 28.—Number of times average prices were unchanged for specified number of consecutive market days at each of 11 public markets and at 7 packing plants located in Iowa-southern Minnesota, 1931-33

Market or plant and year	Times average prices were unchanged for—										
	1 day ¹	2 days	3 days	4 days	5 days	6 days	7 days	8 days	9 days	11 days	
Indianapolis:											
1931	224	38	2								
1932	187	44	9	2							
1933	146	38	12	2							
Total	557	120	23	4							
Cincinnati:											
1931	180	49	6	3							
1932	170	45	6	4		3					
1933	155	42	12	5	1	1					
Total	505	136	24	12	1	4					
Cleveland:											
1931	160	42	12	3	3						
1932	164	37	16	1		1					
1933	88	18	6	2							
Total	412	97	34	6	3	1					
Buffalo:											
1931	185	31	11	3	2	1					
1932	160	47	9	5	1			1			
1933	135	44	11	2							
Total	480	122	31	10	3	1		1			
Pittsburgh:											
1931	245	22	5	2							
1932	190	37	8	5							
1933	109	15	2	1	1						
Total	544	74	15	8	1						
Chicago:											
1931	249	27	1								
1932	236	29	4	1							
1933	227	34	3	1							
Total	712	90	8	2							
East St. Louis:											
1931	272	13	3								
1932	245	31	1								
1933	252	22	4								
Total	769	66	8								

¹ Average prices on these days were different from those on the preceding market day and on the next following market day.

²² Changes in price of hogs during the trading period of the day are not accounted for. This happens often at public markets, but infrequently at interior markets.

TABLE 28.—Number of times average prices were unchanged for specified number of consecutive market days at each of 11 public markets and at 7 packing plants located in Iowa-southern Minnesota, 1931-33—Continued

Market or plant and year	Times average prices were unchanged for—									
	1 day	2 days	3 days	4 days	5 days	6 days	7 days	8 days	9 days	11 days
Kansas City:										
1931.....	220	35	6							
1932.....	219	31	10							
1933.....	233	25	7	1						
Total.....	672	91	23	1						
Omaha:										
1931.....	248	22	4	1						
1932.....	233	32	5							
1933.....	227	31	2	3						
Total.....	708	85	11	4						
Sioux City:										
1931.....	232	32	3	1						
1932.....	200	34	13	1						
1933.....	234	31	1	1	1					
Total.....	666	97	17	3	1					
South St. Paul:										
1931.....	153	40	16	3	2	1				
1932.....	157	41	11	6	3					
1933.....	141	35	24	6						
Total.....	451	116	51	15	5	1				
Plant A:										
1931.....	104	37	23	4	4	2	1			
1932.....	85	41	20	6	5			2	1	
1933.....	123	42	13	4	1	4				
Total.....	312	120	56	14	10	6	1	2	1	
Plant B:										
1931.....	137	63	4	3	1	1		1		
1932.....	119	48	20	7	1					
1933.....	153	44	15	5						
Total.....	409	155	39	15	2	1		1		
Plant C:										
1931.....	162	45	11	3						
1932.....	158	47	12	4	1					
1933.....	177	35	10	3	2		1			
Total.....	497	127	33	10	3		1			
Plant D:										
1931.....	171	50	6	2						
1932.....	144	50	15	5						
1933.....	188	39	10	1		1				
Total.....	503	139	31	8		1				
Plant E:										
1931.....	161	43	13	5						
1932.....	134	41	19	6	2					
1933.....	152	40	18	3	1					
Total.....	447	124	50	14	3					
Plant F:										
1931.....	96	43	14	8		1		1		
1932.....	103	44	12	3	4	3			1	
1933.....	125	36	16	5	3	1				
Total.....	324	123	42	16	7	5		1	1	
Plant G:										
1931.....	91	48	18	7	4		1			
1932.....	75	38	14	7	8	3		1	1	
1933.....	126	47	11	5	1	2				1
Total.....	292	133	43	19	13	5	1	1	1	1

FREQUENCY OF CHANGE IN PRICE DIFFERENTIALS BETWEEN MARKETS

When prices changed from day to day at the different markets such changes were often not of the same amount, and not always in the same direction. As a consequence, price differentials between the different markets which were compared tended to change from one day to the next. The behavior of daily hog-price differentials between Chicago and Indianapolis, Cincinnati and Indianapolis, Chicago and Omaha, and Kansas City and Omaha, for 1933 is shown in figure 30; and between Chicago and plant A, Sioux City and plant B, plant C and plant B, and plant E and plant D for the same period is shown in Figure 31.²³ The behavior of the differentials in price between these pairs of markets for 1931 and 1932, between other public markets and Chicago, between pairs of public markets other than Chicago, and between the different interior markets for the period 1931-33 was found to be substantially the same as that shown in figures 30 and 31.

The number of consecutive days the same price differentials prevailed between 10 of the public markets and Chicago for the 3 years 1931-33 appear in table 29. Price differentials between each of these markets and Chicago changed from day to day more than 70 percent of the market days. Price differentials between pairs of public markets other than Chicago changed from one day to the next to about the same extent as differentials changed between each of the other markets and Chicago. Day-to-day price differentials changed less frequently between public markets located in the same competitive area than between public markets located in somewhat different areas. As an illustration, prices at East St. Louis and Kansas City, at St. Joseph and Kansas City, and at Omaha and Kansas City moved together more closely than prices at each of these markets moved with prices at Chicago.

²³ These are interior packing plants in Iowa and southern Minnesota and are designated by letter instead of by name in order not to reveal the identity of the individual concerns.

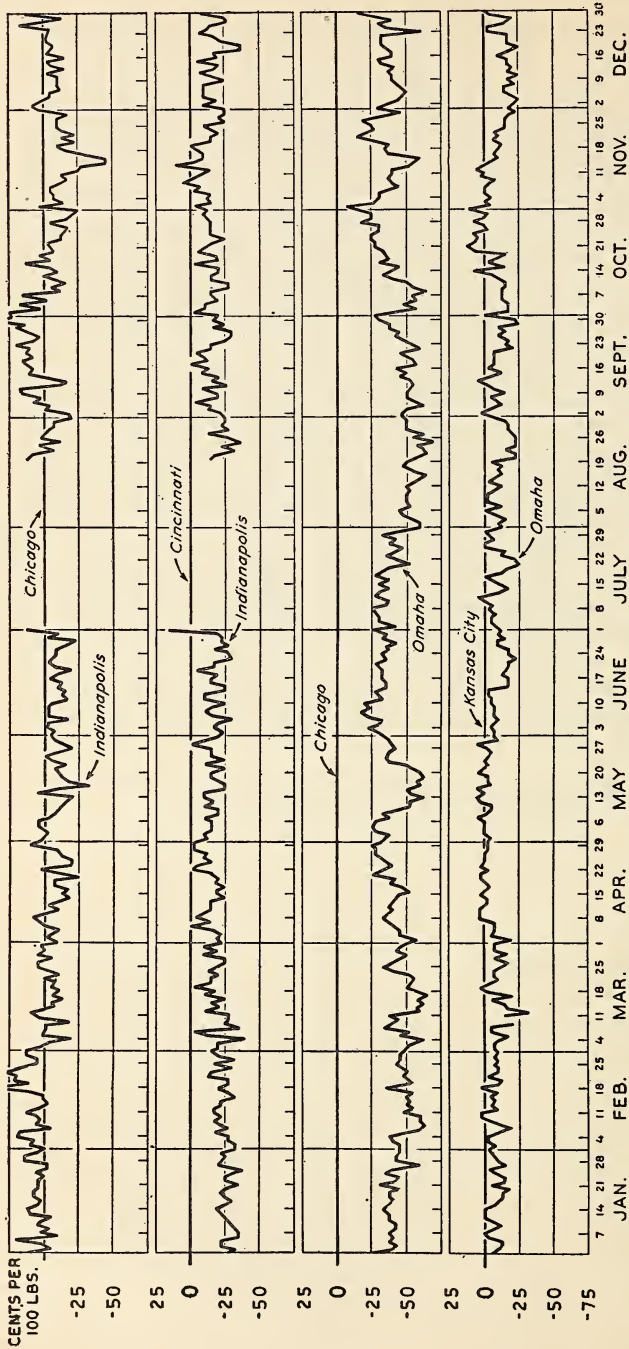


FIGURE 30.—DAY-TO-DAY HOG-PRICE DIFFERENTIALS BETWEEN CHICAGO AND INDIANAPOLIS, CINCINNATI AND INDIANAPOLIS, CHICAGO AND OMAHA, AND KANSAS CITY AND OMAHA, 1933

Price differentials between two given markets tend to vary from day to day. The daily variations, however, are less between markets located in the same general area than those between markets located in different areas.

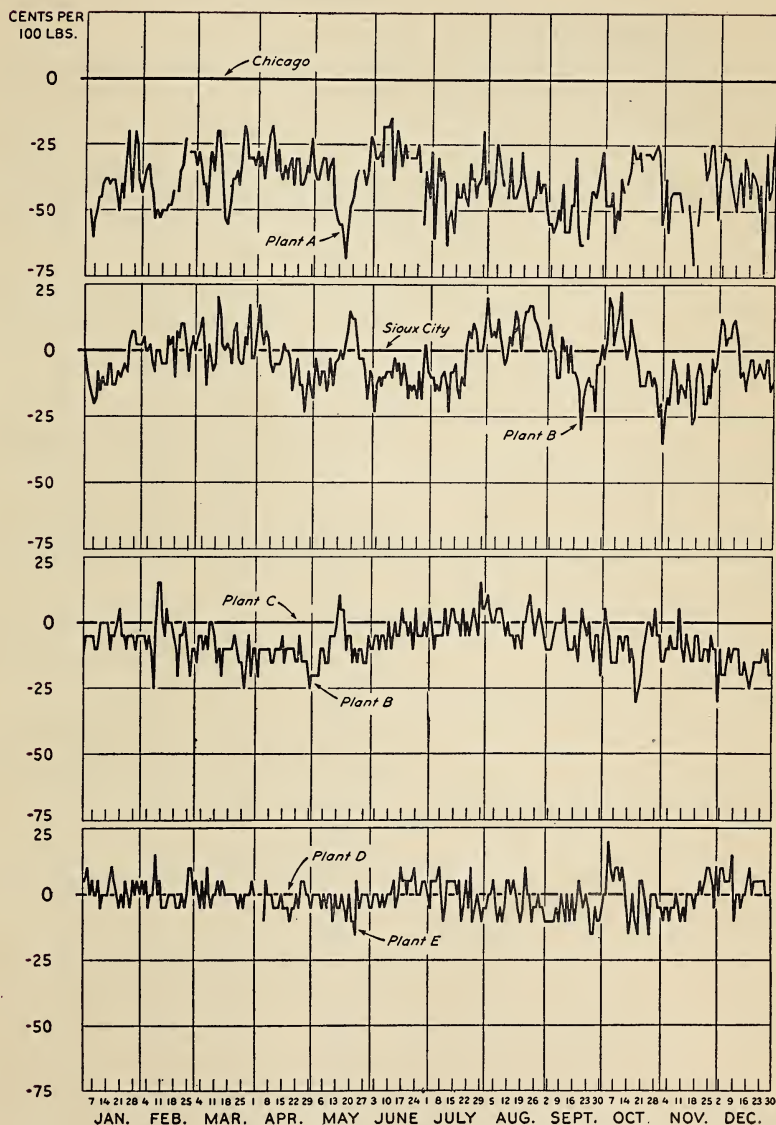


FIGURE 3.—DAY-TO-DAY HOG-PRICE DIFFERENTIALS BETWEEN CHICAGO AND PLANT A, SIOUX CITY AND PLANT B, PLANT C AND PLANT B, AND PLANT E AND PLANT D, 1933.

Price differentials between public markets and interior packing plants in Iowa-southern Minnesota tend to vary from day to day. Daily prices vary less among the individual interior packing plants in the area than they do between individual packing plants and Chicago, or individual plants and Sioux City.

TABLE 29.—*Number of times the price differential between Chicago and each of 10 other public markets was the same for the specified number of consecutive market days, 1931-33*

Market and year	Times differential was the same (on consecutive market days) for—				
	1 day ¹	2 days	3 days	4 days	5 days
Indianapolis:					
1931.....	260	17	4		
1932.....	232	30	6		
1933.....	224	15	4		
Total.....	716	62	14		
Cincinnati:					
1931.....	272	17			
1932.....	239	28	4	1	
1933.....	245	25	1	2	
Total.....	756	70	5	3	
Cleveland:					
1931.....	254	26			
1932.....	237	22	3	1	
1933.....	123	12	1		
Total.....	614	60	4	1	
Buffalo:					
1931.....	257	23	1		
1932.....	253	21	4	1	
1933.....	219	19	1	1	
Total.....	729	63	6	2	
Pittsburgh:					
1931.....	266	19	1		
1932.....	255	25			1
1933.....	135	5	3		
Total.....	656	49	4		1
East St. Louis:					
1931.....	261	17	4		
1932.....	243	26	3		1
1933.....	260	22	1		
Total.....	764	65	8		1
Kansas City:					
1931.....	227	30	5		1
1932.....	210	37	7	1	
1933.....	231	26	6		1
Total.....	668	93	18	1	2
Omaha:					
1931.....	249	25	1		1
1932.....	229	32	5	1	
1933.....	247	22	5		
Total.....	725	79	11	1	1
Sioux City:					
1931.....	251	25	2		
1932.....	213	37	6	1	
1933.....	233	34	2		
Total.....	697	96	10	1	
South St. Paul:					
1931.....	232	27	4	2	
1932.....	206	45	3		1
1933.....	203	39	7	1	
Total.....	641	111	14	3	1

¹ Differentials in prices on these days were different from those on the preceding market day and on the next following market day.

The behavior of day-to-day price differentials between Chicago and each of the seven interior packing plants in Iowa and southern Minnesota, between each of these packing plants and Sioux City, and between each of the other plants and plant D, for 1931 to 1933, is shown in table 30. Price differentials between each of the packing plants and Sioux City changed about as often as between each of the packing plants and Chicago. Prices at the different interior packing plants moved together from one day to the next more closely than prices at each of the plants moved with prices at Chicago or Sioux City.²⁴

²⁴ Certain slaughtering establishments which are located near a public market and which buy hogs direct at their plants base their price definitely upon the prevailing price at the nearby market, for example, the Cudahy Packing Co., at Newport, Minn., adjacent to South St. Paul.

Plant F:														
1931.....	211	24	2	1	230	17	2	3	1	169	32	7	1	1
1932.....	184	39	8	1	194	28	8	3	1	136	34	19	5	1
1933.....	206	32	3	1	215	28	3	3	1	168	30	18	1	1
Total.....	601	95	13	1	639	73	13	3	1	473	96	44	7	2
Plant G:														
1931.....	229	18	8	2	237	27	2	3	1	147	45	10	4	1
1932.....	206	37	4	1	192	39	8	3	1	134	44	11	5	1
1933.....	202	39	7	1	223	30	3	1	1	155	38	11	5	2
Total.....	637	94	19	3	642	96	13	4	1	436	127	32	14	4

¹ Differential was different on the market day before and on the market day after.

MAGNITUDE OF DAY-TO-DAY CHANGE IN PRICE DIFFERENTIALS BETWEEN MARKETS

When price differentials between different markets change from one day to the next, such change may be slight, or it may amount to 25 cents or more. For part of the time the differentials do not change between pairs of markets from the differential which prevailed the previous day. The average day-to-day change in differential between Chicago and markets farther east was greater than between Chicago and markets farther west. Although the differences are not great the indications are that the change in price differentials from day to day tends to be slightly less between individual interior packing plants than between these plants and Chicago or Sioux City, or between individual public markets and Chicago.

Frequency distributions showing the number of times a given amount of change in differentials occurred between Chicago and each of five other public markets for the 3 years 1931-33 are presented in table 31, and the frequency distributions showing the number of times a given amount of change in differentials occurred between interior packing plants A and B and Chicago, between the same plants and Sioux City, and between these plants and plant D are shown in table 32. The changes in differentials from one day to the next between other public markets and Chicago were very similar to the changes shown in table 31; and the changes in differentials between interior packing plants, C, D, E, F, and G and Chicago, the same plants and Sioux City, and between plants C, E, F, and G, and plant D are very similar to the changes shown in table 32.

TABLE 31.—*Variation in day-to-day hog price differential between Chicago and five important public markets, 1931-33*

Variation in day-to-day differential from Chicago prices (cents per 100 pounds)	Days on which specified variation was observed at—														
	Indianapolis			Buffalo			Kansas City			Sioux City			South St. Paul		
	1931	1932	1933	1931	1932	1933	1931	1932	1933	1931	1932	1933	1931	1932	1933
No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
0.....	23	40	27	29	38	27	44	56	42	29	38	53	44	61	58
2.5.....	51	55	51	47	54	44	69	81	73	63	80	90	74	73	71
5.0.....	47	63	40	45	69	40	65	61	73	52	62	48	56	62	64
7.5.....	42	56	43	43	49	31	52	49	40	42	38	50	45	50	33
10.0.....	28	31	27	31	33	33	29	35	29	41	33	33	26	28	34
12.5.....	36	25	23	31	18	22	15	12	20	25	27	18	20	19	20
15.0.....	24	18	12	23	23	16	14	10	9	17	9	9	20	11	12
17.5.....	24	8	11	18	14	20	10	3	6	15	9	4	3	3	7
20.0.....	9	9	3	8	5	12	5	1	8	9	2	3	8	2	3
22.5.....	15	1	8	7	2	3	1	1	2	7	3	1	4	4	2
25.0.....	1	3	4	9	2	4	2		3	2	3	1	4		1
27.5.....	3		3	5		1				3	1		1		
30.0.....	1	1	2	4	2					1	1				
32.5.....			1	1	1	2									2
35.0.....	1			1							1				
37.5.....															
40.0.....				1											
42.5.....															
45.0.....				1					1						
47.5.....															
50.0.....															
52.5.....															
55.0.....															
57.5.....				1											
Average.....	Cts. 9.4	Cts. 7.1	Cts. 8.2	Cts. 9.9	Cts. 7.4	Cts. 8.8	Cts. 6.3	Cts. 5.2	Cts. 6.4	Cts. 8.1	Cts. 6.6	Cts. 5.5	Cts. 6.7	Cts. 5.3	Cts. 6.0

TABLE 32.—*Variation in the day-to-day hog price differential between Chicago, Sioux City, and plant D, and interior packing plants A and B, 1931-33¹*

Variation in day-to-day differential (cents per 100 pounds)	Days on which specified variation was observed																	
	Between Chicago and—						Between Sioux City and—						Between plant D and—					
	Plant A			Plant B			Plant A			Plant B			Plant A			Plant B		
	1931	1932	1933	1931	1932	1933	1931	1932	1933	1931	1932	1933	1931	1932	1933	1931	1932	1933
Number	Number	Number	Number	Number	Number	Number	Number	Number	Number	Number	Number	Number	Number	Number	Number	Number	Number	Number
0.....	39	54	49	45	62	48	31	57	37	32	63	41	73	104	83	72	117	100
2.5.....	63	64	59	63	78	74	46	73	61	60	83	84	74	106	112	96	124	128
5.....	47	62	58	38	63	66	42	60	48	44	71	66	45	74	112	96	124	128
7.5.....	40	43	41	49	42	45	46	41	50	38	36	45	34	91	65	77	43	63
10.....	29	38	29	39	41	32	45	30	39	50	25	34	25	65	82	77	43	63
12.5.....	25	21	16	25	14	17	12	14	27	28	15	16	14	25	13	29	20	9
15.....	19	10	12	15	4	11	20	11	18	22	4	14	4	18	9	16	4	3
17.5.....	13	2	12	18	3	5	17	7	6	10	5	4	1	5	2	4	2	2
20.....	2	3	6	5	9	5	9	4	2	10	4	1	1	5	2	4	4	3
22.5.....	8	3	4	3	1	1	9	2	1	3	1	1	1	5	2	4	4	3
25.....	5	2	2	3	1	1	9	1	2	3	1	1	1	5	2	4	4	3
27.5.....	7	1	1	1	4	4	4	4	2	2	2	2	2	5	2	4	4	3
30.....	1	1	2	1	4	1	2	4	1	2	2	2	2	5	2	4	4	3
32.5.....	1	1	2	1	4	1	2	4	1	2	2	2	2	5	2	4	4	3
35.....	2	1	2	1	4	1	2	4	1	2	2	2	2	5	2	4	4	3
37.5.....	2	1	2	1	4	1	2	4	1	2	2	2	2	5	2	4	4	3
40.....	1	1	2	1	4	1	2	4	1	2	2	2	2	5	2	4	4	3
42.5.....	1	1	2	1	4	1	2	4	1	2	2	2	2	5	2	4	4	3
45.....	1	1	2	1	4	1	2	4	1	2	2	2	2	5	2	4	4	3
47.5.....	1	1	2	1	4	1	2	4	1	2	2	2	2	5	2	4	4	3
50.....	1	1	2	1	4	1	2	4	1	2	2	2	2	5	2	4	4	3
52.5.....	1	1	2	1	4	1	2	4	1	2	2	2	2	5	2	4	4	3
55.....	1	1	2	1	4	1	2	4	1	2	2	2	2	5	2	4	4	3
Average.....	Cents 8.4	Cents 5.9	Cents 6.8	Cents 7.4	Cents 5.0	Cents 5.9	Cents 9.9	Cents 5.8	Cents 6.8	Cents 8.3	Cents 5.0	Cents 5.7	Cents 8.1	Cents 5.5	Cents 6.0	Cents 7.4	Cents 4.6	Cents 5.0

¹ Variations in differentials between plants C, D, E, F, and G and Chicago; between the same plants and Sioux City; and between plants C, E, F, and G and plant D are very similar to the above.

**BEHAVIOR OF PRICES AT INTERIOR MARKETS WHEN PRICES AT PUBLIC MARKETS
DECLINED AS COMPARED WITH WHEN THEY ADVANCED**

Prices at interior packing plants in Iowa and southern Minnesota changed in the same direction as prices changed at Chicago as often when prices at Chicago changed in one direction as in the other. If price changes at interior markets did not behave in this manner the price spread between these markets and Chicago would tend to narrow, or widen, over a period of time. The relationships of day-to-day price changes at 7 interior packing plants as related to day-to-day price changes at Chicago for the 3 years 1931-33 are presented in table 33.

TABLE 33.—Behavior of day-to-day price movements at seven individual interior packing plants in Iowa-southern Minnesota as compared with movements of prices at Chicago, 1931-33¹

Packing plant and year	When price at Chicago advanced						When price at Chicago declined						When price at Chicago remained unchanged					
	Plant price advanced			Plant price unchanged			Plant price declined			Plant price advanced			Plant price unchanged			Plant price advanced		
	Days	Percent ²	Days	Percent ²	Days	Percent ²	Days	Percent ³	Days	Percent ³	Days	Percent ³	Days	Percent ⁴	Days	Percent ⁴	Days	Percent ⁴
Plant A:																		
1931.....	54	46.5	51	44.0	11	9.5	7	7.3	55	36.4	85	56.3	23	74.2	3	9.7		
1932.....	56	48.3	53	45.7	7	6.0	7	5.3	60	45.5	49	49.2	27	64.3	8	19.0		
1933.....	70	61.4	34	29.8	10	8.8	13	10.8	41	34.2	66	55.0	24	58.5	8	19.5		
Total.....	180	52.0	138	39.9	28	8.1	31	7.7	156	38.7	216	53.6	74	64.9	19	16.7		
Plant B:																		
1931.....	70	59.8	33	28.2	14	12.0	11	6.8	47	29.4	102	63.8	16	57.1	5	17.9		
1932.....	74	59.2	43	34.4	8	6.4	7	4.9	51	35.4	86	59.7	19	48.8	7	17.9		
1933.....	87	68.0	36	28.1	5	3.9	8	5.9	37	27.4	90	66.7	16	37.2	12	27.9		
Total.....	231	62.4	112	30.3	27	7.3	26	5.9	135	30.8	278	63.3	51	46.4	24	21.8		
Plant C:																		
1931.....	82	69.5	24	20.3	12	10.2	9	5.9	41	26.8	103	67.3	13	48.2	5	18.5		
1932.....	90	72.6	29	23.4	5	4.0	10	6.9	40	27.8	94	65.3	16	41.0	7	15.4		
1933.....	92	72.4	25	19.7	10	7.9	20	14.6	35	25.5	82	59.9	18	43.9	10	24.4		
Total.....	264	71.6	78	21.1	27	7.3	39	9.0	116	26.7	279	64.3	43	44.9	21	19.6		
Plant D:																		
1931.....	79	68.7	24	20.9	12	10.4	16	10.7	34	22.8	99	66.5	9	29.0	11	35.5		
1932.....	78	64.5	35	28.9	8	6.6	14	10.3	41	30.1	81	59.6	18	37.5	17	27.1		
1933.....	100	78.1	19	14.9	9	7.0	15	11.4	33	25.0	84	63.6	17	39.5	11	25.6		
Total.....	257	70.6	78	21.4	29	8.0	45	10.8	108	25.9	264	63.3	46	37.7	35	28.7		
Plant E:																		
1931.....	75	65.2	33	28.7	7	6.1	12	7.6	40	25.3	106	67.1	13	44.8	6	20.7		
1932.....	77	62.6	38	30.9	8	6.5	9	6.4	49	34.7	83	58.9	16	39.0	9	22.0		
1933.....	88	68.8	35	27.3	5	3.9	13	10.1	35	27.1	81	62.8	11	25.6	19	30.2		
Total.....	240	65.6	106	29.0	20	5.4	34	7.9	124	29.0	270	63.1	40	35.4	45	24.8		

See footnotes at end of table.

TABLE 33.—*Behavior of day-to-day price movements at seven individual interior packing plants in Iowa-southern Minnesota as compared with movements of prices at Chicago, 1931-33*—Continued

Packing plant and year	When price at Chicago advanced						When price at Chicago declined						When price at Chicago remained unchanged					
	Plant price advanced			Plant price unchanged			Plant price declined			Plant price advanced			Plant price unchanged			Plant price advanced		
	Days	Percent ¹	Days	Percent ²	Days	Percent ³	Days	Percent ³	Days	Percent ⁴	Days	Percent ⁴	Days	Percent ⁴	Days	Percent ⁴	Days	Percent ⁴
Plant F:																		
1931.....	47	50.0	38	40.4	9	9.6	8	6.5	49	40.2	65	53.3	16	61.5	4	16.4		
1932.....	57	53.3	45	42.0	5	4.7	6	5.0	43	35.8	71	59.2	24	63.2	6	16.8		
1933.....	73	62.4	37	31.6	7	6.0	7	6.4	39	35.4	64	58.2	20	54.1	7	18.9		
Total.....	177	55.7	120	37.7	21	6.6	21	6.0	131	37.2	200	56.8	60	59.4	17	16.8		
Plant G:																		
1931.....	57	52.3	45	41.3	7	6.4	8	5.4	57	38.8	82	55.8	24	75.0	2	6.2		
1932.....	52	46.0	57	50.5	4	3.5	4	3.1	62	47.3	65	49.6	26	63.4	6	14.6		
1933.....	75	61.0	38	30.9	10	8.1	12	9.5	42	33.3	72	57.1	24	54.5	11	25.0		
Total.....	184	53.3	140	40.6	21	6.1	24	5.9	161	39.9	219	54.2	74	63.3	19	16.2		

¹ Prices were not available for the same number of days at all plants.

² Number of days for the plant compared with Chicago advances is 100 percent.

³ Number of days for the plant compared with Chicago declines is 100 percent.

⁴ Number of days for the plant compared with Chicago unchanged is 100 percent.

SEQUENCE OF PRICE MOVEMENTS BETWEEN CHICAGO AND INTERIOR MARKETS IN IOWA AND SOUTHERN MINNESOTA

In the study of price changes between Chicago and interior markets an analysis was made to determine where price changes are most likely to occur first. It was pointed out earlier in this chapter that price differentials between Chicago and each of the interior packing plants in Iowa and southern Minnesota are more likely to change from day to day than to remain the same. It was also shown that on days when prices at Chicago and at these interior packing plants change in the same direction, they move together as often when the Chicago price goes up as when it goes down. The next step in the analysis was to determine whether or not price changes at Chicago occur in advance of those at interior markets.

The method used was to compare the change in daily prices at these markets by "lagging" the prices at each of the interior packing plants 1 day with Chicago prices and noting the number of days on which the prices moved in the same direction, that is, advanced, remained unchanged, or declined, with respect to prices for the previous day. The comparisons of the daily price movements at Chicago and these interior plants were made for the 3 years 1931-33, and the results are presented in table 34.

TABLE 34.—*Number of days when the movements of hog prices at Chicago and at interior packing plants in Iowa and southern Minnesota were in the same direction, 1931-33*

Packing plant and year	Prices moved in same direction—			
	When price at interior plant was lagged one day with price at Chicago		When price at Chicago was lagged one day with price at interior plant	
	Number of days ¹	Percentage of market days	Number of days ¹	Percentage of market days
Plant A:				
1931.....	94	32.0	119	40.2
1932.....	88	30.6	112	39.4
1933.....	77	28.3	117	42.9
Total.....	259	30.3	348	40.8
Plant B:				
1931.....	99	32.5	132	43.6
1932.....	101	32.9	126	41.0
1933.....	106	34.6	134	43.9
Total.....	306	33.3	393	42.9
Plant C:				
1931.....	95	32.1	133	44.9
1932.....	103	33.7	131	43.0
1933.....	97	31.9	132	43.4
Total.....	295	32.6	396	43.8
Plant D:				
1931.....	113	39.0	119	40.9
1932.....	102	33.6	118	38.8
1933.....	103	34.4	115	38.3
Total.....	318	35.6	352	39.3

¹ Prices on 2 consecutive days are involved in determining a "price movement." First the price movements at interior plants were lagged 1 day with price movements at Chicago, that is, price movements on pairs of days taken 1 day later at the plant than at Chicago, were compared. Similarly price movements at Chicago were lagged 1 day with price movements at interior plants. The price changes were not necessarily of the same amount.

TABLE 34.—*Number of days when the movements of hog prices at Chicago and at interior packing plants in Iowa and southern Minnesota were in the same direction, 1931-33—Continued*

Packing plant and year	Prices moved in same direction—			
	When price at interior plant was lagged one day with price at Chicago		When price at Chicago was lagged one day with price at interior plant	
	Number of days	Percentage of market days	Number of days	Percentage of market days
Plant E:				
1931.....	117	38.7	135	44.9
1932.....	103	34.0	129	42.4
1933.....	107	36.3	124	42.0
Total.....	327	36.3	388	43.1
Plant F:				
1931.....	74	30.8	96	39.8
1932.....	92	34.8	91	34.6
1933.....	81	31.0	104	39.7
Total.....	247	32.3	291	38.0
Plant G:				
1931.....	79	27.9	119	42.3
1932.....	83	29.3	112	39.3
1933.....	88	30.3	141	48.5
Total.....	250	29.2	372	43.4
7 plants:				
1931.....	671	33.4	854	42.5
1932.....	672	32.7	819	39.9
1933.....	659	32.5	867	42.7
Total.....	2,002	32.9	2,540	41.7

When the prices at interior plant A were lagged 1 day with reference to the prices at Chicago, the movements were in the same direction 30.3 percent of the time. When daily prices at interior plant E were lagged 1 day with reference to Chicago prices, the movements were in the same direction 36.3 percent of the time. On the average for the 3-year period, when prices at the seven interior plants were lagged 1 day with Chicago prices, the movements were in the same direction 32.9 percent of the time. This indicates that the price movements at these interior plants, when lagged 1 day with reference to Chicago prices, were the same as those at Chicago about one-third of the time. When the position of these plants with respect to Chicago is reversed (that is, when the daily price at Chicago is lagged 1 day with the price at each of the interior packing plants) it is found that the movements were in the same direction more frequently than when the prices at interior plants were lagged 1 day with Chicago prices. It may be noted from table 34 that when the price at Chicago was lagged 1 day with reference to the price at plant A, the movements were in the same direction 40.8 percent of the time, and when the price at Chicago was lagged 1 day with the price at plant E, the movements were in the same direction 43.1 percent of the time. On an average, when the price at Chicago is lagged 1 day with the price at each of the seven interior packing plants, the movements were in the same direction 41.7 percent of the time. This evidence indicates, therefore,

that a rise or a decline in hog prices is somewhat more likely to appear first at these interior markets than at Chicago, and this further supports the conclusion that no one market sets the price of hogs for the other markets.

GENERAL CONCLUSIONS REGARDING DAY-TO-DAY PRICE RELATIONSHIPS

That interior markets where hogs are bought direct maintain a price which represents a fixed differential above or below the price at Chicago, or that interior markets base their prices on a fixed differential measured from some other public market, which is in turn based on Chicago, or which operate independent of Chicago, is not borne out by this study. Price differentials between individual interior packing plants in Iowa-southern Minnesota and Chicago, and between these same packing plants and Sioux City changed more often from day to day than they remained the same. The amount of such day-to-day change was greater than the amount of change in differentials between any two of these packing plants. Interior livestock markets where hogs are bought direct find it necessary to adjust the price paid on a given day in order to equate properly the supply and demand for hogs.

The closer price relationships between individual interior markets than between these interior markets and some public market, is due to the fact that in most cases buyers at the interior markets are bidding against each other in order to get hogs and their prices cannot get far out of line if they are to attract the desired volume of hogs.

Changing price differentials from day to day between individual markets are the result of influences that are effective to a different degree, or are entirely absent at one market as compared with another market. The price at each market, from day to day, is affected by the broad supply and demand factors in the trade which cause the price movement at all markets to be somewhat similar. But local influences cause relative prices between markets to change almost continually. Forces are then set in motion to restore the equilibrium between the market affected and other markets, but such adjustment takes time. These changes affect prices at a market within limits, as the shifting of supplies of hogs and of orders for hogs and for hog products among markets tends to bring the price relationship between markets toward an equilibrium. During the process of correcting one price discrepancy between markets, other disturbances are likely to occur, and forces to correct these are set in motion. Price relationships have a tendency to gravitate toward a certain point, but they are continually buffeted about by various disturbing forces, and as a consequence they continue in a constant state of flux.

Supply and demand forces are equated at individual markets by means of price. The equilibrium of the composite supply and demand at all markets determines the level of hog prices. The adjustment of the forces of supply and demand at each individual market may cause prices at that market to be out of line with those at other markets for shorter periods, and this may happen at Chicago as well as at other markets. A rise or a decline in hog prices is as likely to appear first at the interior markets in Iowa and southern Minnesota as at Chicago.

Trading operations at interior markets in Iowa-southern Minnesota were not hampered during the two recent periods when the Chicago livestock market was inactive. The deadlock between selling agencies

and buyers caused trading in hogs to cease at the Chicago market from November 9 to 17, 1933, but direct marketing in the Iowa-southern Minnesota area was not interrupted. In fact, the volume of trading was stimulated instead of hampered during this period. Nor was direct trading in hogs at interior markets interfered with during the period from July 25 to August 2, 1934, when no prices were reported at Chicago, because of the strike of livestock handlers at that market. The general level of hog prices advanced during this period, and interior markets where hogs were bought direct reflected this advance as did other markets.

HOG RECEIPTS AND PRICES AT CHICAGO AND AT INTERIOR MARKETS BY DAYS OF THE WEEK

In considering the behavior of prices at different markets and the price relationships between markets it is desirable to examine the relationship between hog receipts and prices at interior markets where hogs are bought direct as compared with the same relationship at some important public market. Chicago will be used to represent the public markets, and the 22 concentration yards and 7 packing plants in Iowa and southern Minnesota which report receipts and prices to the Federal market news office at Des Moines will be used to represent the interior markets.

The normal distribution of hogs received direct, hogs consigned for sale, and the total, for the different days of the week at Chicago for each of the years 1931 to 1933 are shown in figure 32. Receipts of hogs moving direct to packers at Chicago were distributed differently for the days of the week than were the receipts of hogs consigned for sale at the market. In the distributions for 1933 it is found that the proportion of direct hogs received on Monday was about the same as the proportion of the hogs consigned for sale on that day. Direct receipts were lowest on Tuesday, increased again on Wednesday, and remained about constant for Thursday, Friday, and Saturday. The proportion of the total hogs consigned for sale at the market decreased progressively for each day of the week, the smallest receipts being on Saturday, which represented about 1 percent of the total. "Normal" as used in this section represents the average of the middle one third of the observations, with adjustment for trend.

The distribution of hogs received direct at Chicago was considerably more uniform for the different days of the week in 1933 than in 1931. The distribution of receipts of hogs consigned for sale changed some for the days of the week between 1931 and 1933, but the uniformity of the distribution was not affected.

The normal behavior of the price of hogs at Chicago for the different days of the week for 1931 to 1933 is shown in figure 33. Friday's price was above the average for the week each of the 3 years, and Monday's price was above for 1931 and 1932, but was equal to the average for 1933. Saturday's price was normally below Friday's price, and was below the average for the week in 1933, but was equal to the average for 1931 and 1932.

A comparison of figures 32 and 33 shows that there was little relationship between the proportion of the hogs normally offered for sale at Chicago on the different days of the week and the normal price for that day. Receipts were normally largest on Monday, and the price was as high as the average for the week, or higher. Re-

ceipts on Friday were the smallest for any day of the week, with the exception of Saturday, and the price was usually higher than for any other day. Receipts on Saturday were very small, and the price was

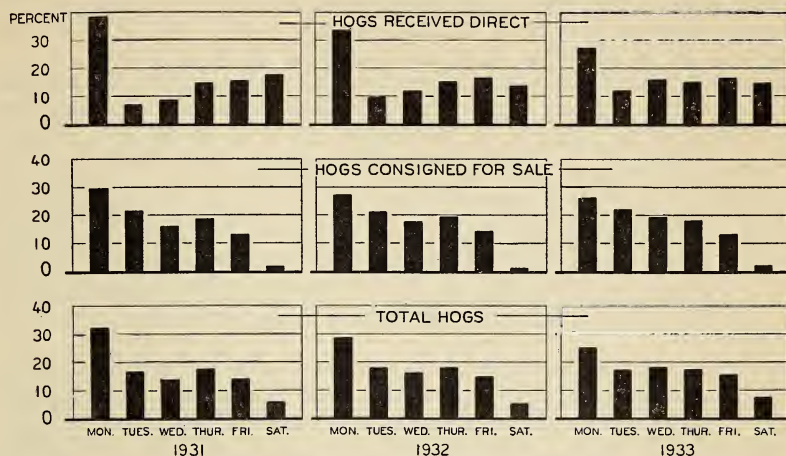


FIGURE 32.—NORMAL PERCENTAGE OF HOGS RECEIVED ON THE DIFFERENT DAYS OF THE WEEK AT CHICAGO, CLASSIFIED INTO HOGS RECEIVED DIRECT, HOGS CONSIGNED FOR SALE, AND TOTAL, BY YEARS, 1931-33.

Direct receipts of hogs at Chicago usually are largest on Monday and smallest on Tuesday. The volume of such receipts was more uniform for the different days of the week in 1933 than in 1931 and 1932. Hog shipments consigned for sale also are largest on Monday, but are smallest on Saturday.

normally equal to the average for the week during 1931 and 1932 and lower than the average for 1933.

The normal daily distribution of receipts of hogs by 7 interior packing plants combined, and 22 concentration yards combined, in Iowa-southern Minnesota, and of these markets combined, by years, for 1931 to 1933 is shown in figure 34. The heaviest receipts at

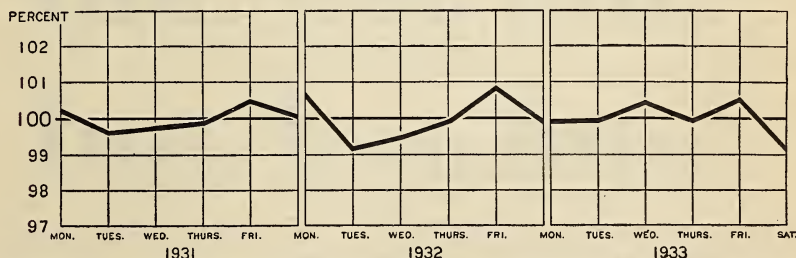


FIGURE 33.—NORMAL BEHAVIOR OF PRICE OF HOGS FOR THE DIFFERENT DAYS OF THE WEEK AT CHICAGO, 1931-33.

Hog prices on Monday and Friday at Chicago tend to be as high as, or higher than, their average for the week. The proportion of hogs received direct at that market on these two days is generally larger than on the other days of the week. (See fig. 32.)

interior markets arrived on Saturday.²⁵ Purchases at packing plants were more constant from day to day during the week than at concentration yards. At packing plants the proportion of the weekly

²⁵ The graphs are based on data on receipts reported by the Bureau's office at Des Moines, Iowa. The number of hogs reported for a given day represents the receipts from 8 a.m. the previous day to 8 a.m. the day reported. Consequently most of the hogs were purchased on the previous day's price. For that reason an adjustment was made in receipts; that is, hogs reported on Monday were changed to Saturday and represent receipts for Saturday after 8 a.m., for Sunday, and for Monday up to 8 a.m., but the majority of them were purchased at Saturday's price. Likewise receipts reported on Tuesday were changed to Monday, etc.

total receipts varied from 11 percent on Monday to 26 percent on Saturday in 1933, whereas for the same year at concentration yards the normal receipts varied from 8 percent on Monday to 37 percent on Saturday. Receipts at packing plants were more uniform for the different days of the week in 1933 than for 1931 and 1932. This, however, did not appear to be true at concentration yards.

The normal behavior of price of hogs for the different days of the week at three representative concentration yards and three representative packing plants in Iowa-southern Minnesota for 1931 to 1933 is presented in figure 35. No apparent relationship exists between the normal distribution of receipts and the normal behavior of prices for the different days of the week. The price on Saturday was normally as high, and sometimes higher, than for the other days of the week even though receipts were normally the highest on that day. Receipts on Tuesday, on the other hand, were normally quite low, yet the price on that day tended to be as low as for any day in the week.

Relatively large Saturday receipts can be more advantageously handled at concentration yards than at packing plants. Receipts of hogs at these concentration yards are forwarded to packers at Chicago, to packers at other public markets in the Corn Belt, to interior

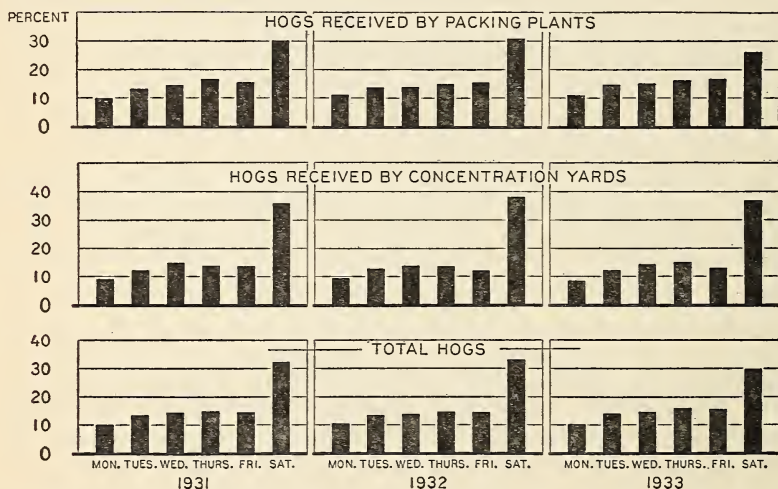


FIGURE 34.—NORMAL PERCENTAGE OF HOGS RECEIVED FOR THE DIFFERENT DAYS OF THE WEEK AT 7 INTERIOR PACKING PLANTS AND 22 CONCENTRATION YARDS IN IOWA-SOUTHERN MINNESOTA, BY YEARS, 1931-33.

Receipts of hogs at interior packing plants and concentration yards are generally largest on Saturday and smallest on Monday.

packers, and to packers in the East. Such hogs will usually arrive at these plants for slaughter by the following Monday or later. At interior packing plants, on the other hand, it is necessary to hold a considerable proportion of Saturday's receipts for Monday's slaughter.

At interior markets the volume of receipts is governed to a considerable extent by prices offered. Relatively high prices at a given point will attract hogs, whereas relatively low prices will check hog receipts. The question may be raised, therefore, as to whether the proportionately larger Saturday's receipts at concentration yards is in response to

relatively more attractive prices there than at packing plants on that day. Although the price on Saturday tends to be slightly higher in

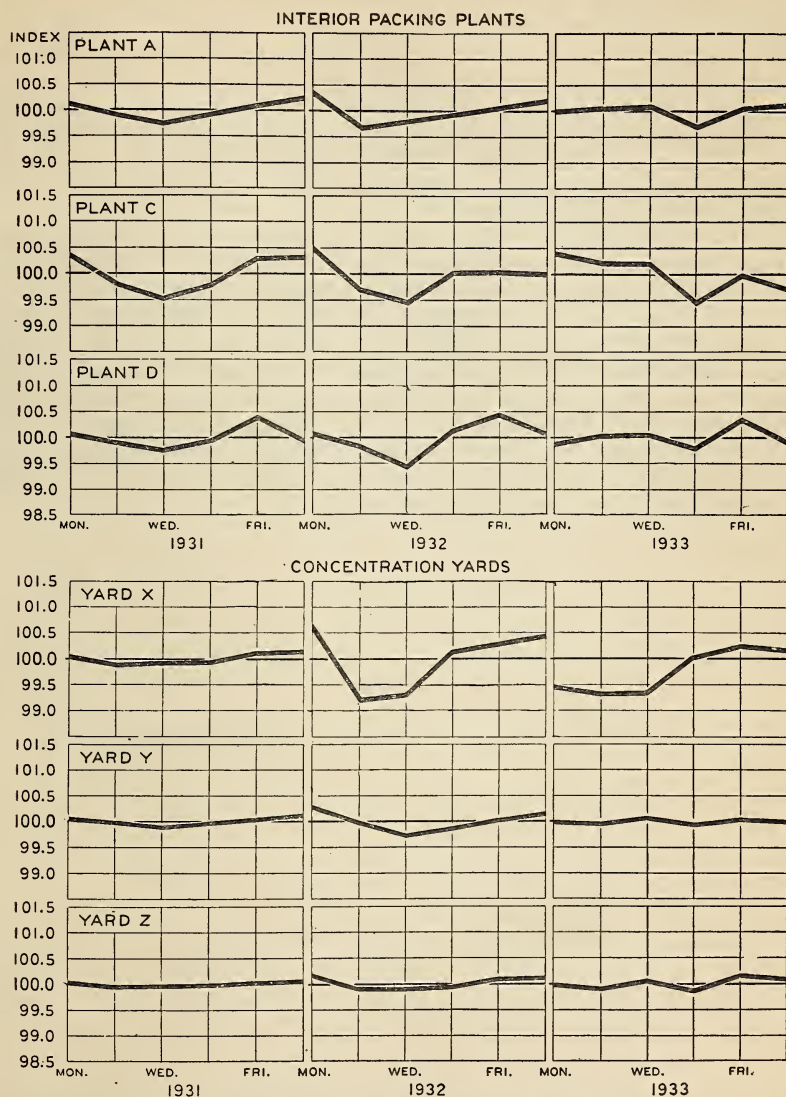


FIGURE 35.—NORMAL BEHAVIOR OF PRICE OF HOGS FOR THE DIFFERENT DAYS OF THE WEEK AT THREE REPRESENTATIVE INTERIOR PACKING PLANTS AND THREE REPRESENTATIVE CONCENTRATION YARDS IN IOWA-SOUTHERN MINNESOTA, 1931-33.

Hog prices at interior packing plants and concentration yards in Iowa and southern Minnesota on the average are highest on Mondays and Saturdays, whereas receipts are usually largest on Saturday and smallest on Monday. Prices at these points were usually lowest on Tuesday and Wednesday in 1931 and 1932 and on Thursday in 1933, whereas receipts on these days were much smaller than those on Saturday. (See fig. 34.)

relation to the price on the other days of the week at concentration yards than at packing plants, as is shown in figure 35, the difference is so small that it is doubtful whether this fully accounts for the rela-

tively greater Saturday's receipts of hogs at concentration yards than at interior packing plants.

The relationship between the daily receipts of hogs and price is different at public markets than at interior markets. Receipts at public markets where hogs are consigned for sale constitute one factor which is taken into account in establishing the price, and the volume of receipts tends to affect price inversely. At interior markets the prices are announced early in the day and seldom change during the day. If the prices are relatively high, hogs will be attracted to the market on that day; whereas if they are relatively low, there is a tendency for hogs to be held back.

It has been pointed out that receipts and prices were normally more or less different for the different days of the week. A study was made to ascertain how prices tended to vary from the normal price curve, for each day, as receipts varied above or below the normal-receipts curve for corresponding days, at the two types of markets. This showed that when receipts of hogs at Chicago were larger than normal the prices tended to be depressed, and when receipts were lighter than normal, the prices tended to increase. At interior markets in Iowa-southern Minnesota receipts greater than normal were associated with relatively high prices and receipts smaller than normal were associated with relatively low prices.

CHAPTER 10

EFFECT OF DIRECT MARKETING ON THE QUALITY OF HOGS AT PUBLIC MARKETS

In conducting this study a survey was made to determine the proportions of hogs of the different grades obtained by packers through direct purchase as compared with those in their purchases at public markets. Another objective was to determine whether there were sufficient quantities of hogs in the different grades at public markets to provide a basis for reliable market quotations on those grades. To obtain this information six marketing specialists who were qualified to grade hogs were detailed for a period of 16 weeks, from February to June 1934, to grade hogs according to the United States standards. This grading was done at all types of markets, including those most active in buying hogs direct. These standards were agreed upon by representatives of the packers, the producers, and the United States Department of Agriculture, July 31, 1931.

Hogs were graded at 132, different representative markets, including 29 public markets, 42 concentration yards, 45 packing plants that buy direct, and 16 auction markets (table 35). A total of 198,551 hogs were carefully and uniformly classified and graded. Of this number, 107,701 were graded at public markets, 84,999 at direct buying and receiving points, and 5,851 at auctions.

TABLE 35.—*Number of markets where hogs were graded, and number of hogs graded at each type of market, by regions, February to June 1934*

Type of market	Eastern Corn Belt		Northwestern Corn Belt		Southwestern Corn Belt		Outside Corn Belt		Total	
	Mar-kets	Hogs	Mar-kets	Hogs	Mar-kets	Hogs	Mar-kets	Hogs	Mar-kets	Hogs
Public markets.....	16	77, 076	4	13, 259	5	13, 281	4	4, 085	29	107, 701
Packing plants.....	21	38, 755	17	23, 302	2	721	5	5, 884	45	68, 662
Concentration yards	18	4, 856	19	11, 075	5	406	-----	-----	42	16, 337
Auctions.....	14	5, 405	-----	-----	-----	-----	2	446	16	5, 851
Total.....	69	126, 092	40	47, 636	12	14, 408	11	10, 415	132	198, 551

PROPORTIONS OF HOGS OF DIFFERENT CLASSES AND GRADES AT VARIOUS TYPES OF MARKETS

All hogs were classified into three groups: Butcher hogs, packing sows, and miscellaneous (table 36). The largest proportion of hogs in the butcher class was found at concentration yards and packing plants, and the smallest proportion at auctions. The proportion of packing sows was about the same at the various types of markets. Miscellaneous hogs received at concentration yards and packing plants represented slightly more than 1 percent, at public markets 5 percent, and at auctions 15 percent.

TABLE 36.—*Number and percentage of butcher hogs, packing sows, and miscellaneous hogs graded, by types of markets, February to June 1934*¹

Type of market	Classification of hogs graded						
	Butcher hogs		Packing sows		Miscellaneous		Total
	Number	Percent	Number	Percent	Number	Percent	Number
Public markets.....	84,083	91.7	3,030	3.3	4,627	5.0	91,740
Packing plants.....	58,967	95.2	2,069	3.3	925	1.5	61,961
Concentration yards.....	13,487	95.9	390	2.8	183	1.3	14,060
Auctions.....	5,507	81.5	235	3.5	1,012	15.0	6,754
Total.....	162,044	92.8	5,724	3.3	6,747	3.9	174,515

¹ No records were kept of packing sows and miscellaneous hogs at a few of the markets where grading was done early in this period. This table accounts for only the hogs in lots where complete records were obtained of butcher hogs, packing sows, and miscellaneous hogs. Consequently the total does not check with the total in table 35.

The butcher hogs were graded as Choice, Good, Medium, or Cull, and the packing sows as Good, Medium, or Cull. The miscellaneous hogs which included boars, stags, pigs, piggy sows, and off sorts were not graded. The number and percentage of butcher hogs placed in each grade at the different types of markets are shown in table 37. The proportion of hogs grading Choice, or Choice and Good, was highest at concentration yards and lowest at auctions. A slightly larger proportion of the hogs at public markets graded Choice than at packing plants which bought hogs direct. These proportions, however, varied somewhat between different areas, and between individual market outlets of the same type in a given area.

TABLE 37.—*Number and percentage of butcher hogs in each grade, by type of markets, February to June, 1934*

Type of market	Butcher hogs graded as—								
	Choice		Good		Medium		Cull		Total
	Num- ber	Per- cent	Num- ber	Per- cent	Num- ber	Per- cent	Num- ber	Per- cent	Num- ber
Public markets.....	15,488	15.4	50,847	50.7	30,466	30.4	3,477	3.5	100,278
Packing plants.....	9,652	14.7	33,195	50.5	21,182	32.3	1,639	2.5	65,668
Concentration yards.....	3,213	20.3	8,663	54.8	3,625	23.0	296	1.9	15,797
Auctions.....	559	12.1	2,191	47.2	1,774	38.2	115	2.5	4,639
Total.....	28,912	15.5	94,896	50.9	57,047	30.6	5,527	3.0	186,382

GRADES OF HOGS RECEIVED AT CHICAGO DIRECT AND FOR SALE ON THE PUBLIC MARKET

A special check was made of the grades of hogs received at Chicago, both direct and consigned for sale on the public market (table 38). A sample consisting of 56,051 hogs was graded, 35,150 of which were sold on the public markets and 20,901 were marketed direct. Of the public-market hogs graded, 19.3 percent were in the Choice grade and of the hogs received direct by packers 14.5 percent were in that grade; 61 percent of the public-market hogs were in the Good and Choice grades combined and 55.4 percent of the hogs received direct by packers were in these grades. A larger proportion of Medium

grade hogs was found among the direct than among the market hogs. More Cull grade hogs were found among the market hogs than among the direct hogs. It was evident therefore that the Chicago market not only had a representative supply of the better grades of hogs for sale at that time but that it had a larger proportion of them than were shipped direct to the packers.

TABLE 38.—*Hogs graded at Chicago: Number and percentage consigned for sale at public market and received direct by packers, by grades, February to June 1934*

Method of sale	Choice		Good		Medium		Cull		Total	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Consigned for sale at market...	6,801	19.3	14,665	41.7	11,876	33.8	1,808	5.2	35,150	100
Received direct by packers....	3,036	14.5	8,555	40.9	8,538	40.9	772	3.7	20,901	100
Total.....	9,837	17.6	23,220	41.4	20,414	36.4	2,580	4.6	56,051	100

GRADES OF HOGS AT PUBLIC MARKETS AND AT OTHER TYPES OF MARKETS

A comparison was made of the qualities of all butcher hogs graded at public markets with the qualities of all butcher hogs graded at other types of markets combined. Table 39 shows that 66.1 percent of the butcher hogs graded at public markets were in the Good and Choice grades and that 66.7 percent of the hogs graded at other types of markets combined were in these grades. More Cull-grade hogs were among those graded at public markets than among those graded at the other markets combined, although the proportion of Cull hogs found at auctions was larger than at any other type of market.

These comparisons show that the proportions in the various grades of butcher hogs graded at public markets were not greatly different from those graded at other types of markets. It is reasonable to assume, therefore, that if all commercial butcher hogs had been consigned to public markets for sale the proportions grading Choice, Good, Medium, and Cull would have been substantially the same as were found among the butcher hogs that were graded on public markets. Although it is true that in some States, and in some sections, a relatively smaller proportion of the hogs of the Good and Choice grades go to public markets for sale and that more of them go through direct channels, it is apparent that enough hogs of these grades are received at all public markets to provide adequate bases on which to establish reliable price quotations for these grades.

The number of packing sows graded was relatively small, being limited to 5,423 (table 40). A larger proportion of sows of low grade was found at auctions than at other types of markets. These, to a considerable extent, represented brood sows. Sows graded at concentration yards and packing plants were of slightly higher quality than those graded at public markets, but at each of these three types of markets more than 60 percent of the sows graded Good.

TABLE 39.—*Number and percentage of hogs in each grade graded at public markets and at all other markets combined, February-June 1934*

Type of market	Choice		Good		Medium		Cull		Total	
	<i>Number</i>	<i>Per- cent</i>	<i>Number</i>	<i>Per- cent</i>	<i>Number</i>	<i>Per- cent</i>	<i>Number</i>	<i>Per- cent</i>	<i>Number</i>	<i>Per- cent</i>
Public markets.....	15,488	15.4	50,847	50.7	30,466	30.4	3,477	3.5	100,278	100.0
All other markets combined....	13,424	15.6	44,049	51.1	26,581	30.9	2,050	2.4	86,104	100.0
Total.....	28,912	15.5	94,896	50.9	57,047	30.6	5,527	3.0	186,382	100.0

TABLE 40.—*Number and percentage of packing sows by grades, by types of markets, February to June 1934*

Type of market	Packing sows graded as—						
	Good		Medium		Common		Total
	<i>Number</i>	<i>Percent</i>	<i>Number</i>	<i>Percent</i>	<i>Number</i>	<i>Percent</i>	<i>Number</i>
Public markets.....	1,702	60.9	893	31.9	201	7.2	2,796
Packing plants.....	1,290	62.3	658	31.8	122	5.9	2,070
Concentration yards.....	218	61.1	116	32.5	23	6.4	357
Auctions.....	43	21.5	137	68.5	20	10.0	200
Total.....	3,253	60.0	1,804	33.3	366	6.7	5,423

CHAPTER 11

COST OF MARKETING HOGS DIRECT AND AT PUBLIC MARKETS

The cost of marketing is an important element in determining the relative advantages to farmers of different methods of marketing. For hogs sold direct, the producer usually incurs no expense except for transportation, although some concentration yards and packing plants permit feeding if the shipper so requests, the cost of feed being deducted from the proceeds of the sale. Hogs consigned for sale at a public market usually incur expense for feed, yardage, selling commission, and some minor items. The transportation cost on such hogs is usually greater and the shrinkage of tissue is also greater than on hogs sold locally, because the market is usually located at a greater distance from the farm. Expenses incident to marketing must be deducted from the selling price before the net return to the farmer is determined.

Many of the hog farmers who answered the questionnaire stated that their principal reason for selling hogs direct was to avoid the higher marketing costs at public markets. Nearly two-thirds of the farmers who sold direct gave as their reason that returns were better, either because the expenses of selling were less or because the hogs sold at higher prices.

EXPENSE OF SELLING HOGS DIRECT

Most of the packers who buy direct from producers or dealers will receive hogs at their plants, or concentration yards, and the price is usually based on the weight of the hogs when delivered, but some packers may buy some hogs on the basis of weights at other country points.

The cost to producers of selling hogs direct to packers is usually confined to transportation of the hogs from the farm to the plant. This may represent the cost of trucking, in which case the hogs move directly from the farm to the plant. If the hogs are transported by rail, the freight from the local loading point to the plant is usually paid by the seller. Some packers pay freight on some rail shipments of hogs to compensate for shrinkage in transit.

Some hogs are fed before they are weighed at the packing plant. The 66 plants that furnished information on this question reported that 8 percent of the hogs received direct in 1933 were fed before weighing. Feeding is optional with the shipper, who is required to pay for the feed. The quantity and the cost of such feed is usually less than at most public markets. Some of the packers who buy hogs direct add a certain amount to the weight of hogs which have had heavy shrinkage in transit instead of providing feed before weighing. This saves the expense of paying for feed. Yardage and commission are seldom paid on direct sales to packers.

COST OF ASSEMBLING HOGS LOCALLY

Packing plants reporting on the cost of assembling hogs locally (66 plants) stated that 45 percent of their direct purchases in 1933 were from private dealers or from truckers, and that 9 percent were from cooperative shipping associations. Thus in somewhat more than half of the sales it would be necessary to deduct the charges for local services of assembling the hogs from the prices paid by packers in order to determine the prices received by farmers.

These local costs were not included in the present study since they must be met whether hogs are sold direct or through public markets. Several studies of local assembling costs indicate an average of between 8 and 10 cents per hundredweight during the years from 1915 to 1933 (1, 5, 6, 7).²⁶

COST OF OPERATING CONCENTRATION YARDS

The analysis of the cost of operating concentration yards is confined to 18 yards for 1931, 22 yards for 1932, and 24 yards for 1933, which were operated by a number of the larger meat packers and for which the data on costs were ascertainable. It does not include the costs of operating yards conducted by independent dealers or other handlers of livestock. The yards whose costs were studied were not only typical of those found in the hog-producing sections, but they were also among the best known.

The following cost items were considered for each station: Salaries and wages; feed and bedding; interest, rent, and taxes; telegraph and telephone tolls; depreciation on real and personal property; water, light, heat, and power; insurance; supplies; traveling expenses; miscellaneous expenses; and general supervisory costs of the central management. The allocation of certain joint costs, such as the costs of supervision from the headquarters' office, was made after consulting the central management. All costs were obtained either directly from the ledgers of the cooperating packers by the field investigator or were supplied by the packer.

These costs cover operations at the concentration yards only. To these operating costs such other items as freight to the packing plant; losses sustained on dead and crippled hogs; shrinkage; charges for weighing, driving, yarding, and handling at destination; as well as the cost of the hogs must be added to get the total delivered cost. Yardage charged by the stockyards company at the market where plants receiving the hogs were located is not included.

The average cost per head of operating the concentration yards for each of the 3 years was as follows:

	<i>Cents</i>
1931—average of 18 yards.....	19. 6
1932—average of 22 yards.....	19. 5
1933—average of 24 yards.....	15. 0

²⁶ In addition to the citations mentioned unpublished data from Iowa State College and from the Farm Credit Administration were considered in connection with this study as well as the following:

UNITED STATES DEPARTMENT OF AGRICULTURE, BUREAU OF AGRICULTURAL ECONOMICS. COST OF MARKETING HOGS IN THE CORN BELT IN 1921 (A PRELIMINARY REPORT) p.9. 1923. (Mimeographed. Cady, E. L. MARKETING HOGS THROUGH COOPERATIVE LIVESTOCK SHIPPING ASSOCIATIONS. pp. 13-22, 29. 1923. (Unpublished master's thesis, Iowa State Col.)

The average cost per 100 pounds of hogs of operating these concentration yards for each of the 3 years was as follows:

	<i>Cents</i>
1931—average of 13 yards	8.7
1932—average of 20 yards	8.6
1933—average of 22 yards	6.3

More yards were included in determining the cost of operation per head than per 100 pounds for each of the 3 years. This is because information on the average weight of hogs was not available for all plants. Costs were lower in 1933 than in 1931 and 1932 because of an increase in the volume of hogs handled at some yards, and to a general reduction in operating expenses, chief of which were salaries, wages, and cost of feed.

There was a great deal of variation in the cost of operating different concentration yards. For example, while the average cost in 18 yards in 1931 was 8.7 cents per 100 pounds the costs in individual yards varied from 5.4 to 14.5 cents. In 1932 when the average cost in 22 yards was 8.6 cents the range was from 3.4 to 27.7 cents. In 1933 the average cost in 24 yards was 6.3 cents, but the range was from 2.6 to 16.9 cents. The number of concentration yards which had average costs of 12 cents per 100 pounds or more were limited to 1 in 1931, 4 in 1932, and 1 in 1933.

The average number of hogs received at the concentration yards covered by this study was 79,277 in 1931, 69,675 in 1932, and 73,334 in 1933. The acquisition of new yards and the discontinuance of others are important factors that affect the average for these years. The number of hogs handled by the individual yards included in this study ranged from 12,488 to 158,663 in 1931, from 23,042 to 158,665 in 1932, and from 16,479 to 142,445 in 1933. Thus, the volume handled by individual yards ranged from an average of less than 2 double-deck cars per week to as high as 25 such cars per week.

The volume of business at the yards is an important factor in the unit cost of operation. Other factors are wages, salaries, feed, and other items of cost. Buying livestock at a yard is a business in which the principle of decreasing costs per unit applies. Overhead costs that are fixed for a given yard constitute a large portion of all costs and consequently the lowering of the unit cost of operation at a particular yard is contingent primarily on an increase in the volume of business. This is shown in table 41, where the yards are classified on the basis of the number of hogs handled in each of the 3 years.

TABLE 41.—Average cost of operation at concentration yards, classified according to volume of hogs handled, 1931-33

Year	50,000 head and less per year	50,001 to 100,000 head per year	Over 100,000 head per year
	<i>Cents per head</i>	<i>Cents per head</i>	<i>Cents per head</i>
1931	29.0	19.8	17.6
1932	30.0	22.1	14.9
1933	17.1	15.3	13.9

It has been stated previously that the operating margins of cooperative shipping associations and local dealers averaged from 8 to 10 cents a hundred pounds during the period from 1915 to 1933. The average margin from 1931 to 1933 was probably somewhat lower than this because of lower prices of a number of cost items but probably was somewhat higher than the cost of assembling hogs at concentration yards. The establishment of concentration yards has created a large number of units of considerable size for assembling hogs in the country, thereby making possible certain economies of operation and facilitating the sorting, selling, and distribution of hogs. On the other hand, the increase in the business of these yards, the increased volume of hogs purchased direct by packers, and the establishment of a large number of auctions, have tended to decrease the volume of hogs handled by many local dealers and cooperative livestock shipping associations and have forced others out of business.

Concentration yards may perform the function of assembling hogs out of first hands. To that extent they take the place of the local livestock dealer, or local cooperative livestock shipping association. In a few cases, concentration yards may represent an additional link in the marketing chain. This is the case where hogs are received from dealers or cooperative associations and are afterwards shipped from the yards to the same type of market to which these agencies formerly sold their hogs. This lengthening of the marketing chain can be justified only on the ground that the concentration yards contribute some economic service not furnished by the dealers or cooperative associations, such as more advantageous sorting or selling, or the distribution of the hogs to the most advantageous market.

In general, it appears that the establishment of concentration yards in the country have made possible a lowering of selling costs, although doubtless some concentration yards have been established where conditions do not warrant, and in such cases costs of marketing may have been actually increased. By increasing the number of agencies in a certain community the average volume handled by each will tend to be reduced. This in turn will tend to increase operating costs per unit.

The establishment of a large number of concentration yards and of additional interior packing plants undoubtedly has enlarged the total investment in marketing facilities and has tended to increase the number of persons engaged in the movement of hogs from farms to consumers. Although this development involved some duplication of existing facilities, the physical capacity of which was already adequate, it would not necessarily add to the total costs of marketing unless the total charges of the earlier established facilities were not reduced and the charges of those later established were added to this total. This is not the case. The growth of the new facilities has reduced both the volume of business and the gross revenue of many of the older establishments, since these have not increased their unit charges to compensate for reduced volume. Hence the question of whether total marketing costs have been increased or decreased depends largely on the relative costs of the old method as compared with the new.

PUBLIC-MARKET CHARGES FOR HANDLING AND SELLING HOGS

Many hog producers have probably turned to direct marketing in order to avoid paying the charges for handling and selling hogs in the public markets. The incentive to avoid such charges has been particularly strong during the last few years because hog prices have been very low and the public-market charges have represented an increased proportion of the market value of the hogs. Somewhat the same situation exists with respect to the marketing of many farm products. In general, the charges for transportation, processing, and marketing tend to be rather inflexible. When market prices of farm products drop, these charges become a greater burden on the farmer and the incentive to avoid them is greater.

Published tariffs at different public markets do not offer a satisfactory basis for calculating the charges actually paid by producers. For example, the commission rates frequently vary with the size of the consignment. Likewise yardage charges are often higher on "drive-ins" or truck receipts than on rail receipts, and the former constitute a much greater proportion of the total than in former years (table 7).

The allowance of corn also varies considerably, and hence an allocation based upon the posted price of corn and total hog receipts would not give the actual charge paid on a given consignment. Consequently the results of this study were based on an analysis of public-market charges on account sales rendered to shippers.

The first study to be made by the United States Department of Agriculture on the subject of public-market charges for handling and selling hogs was based on a tabulation of the posted charges at several public markets for the year 1915.⁽⁵⁾ Since these data were taken from the published rates charged by the different agencies they do not measure exactly the charges paid by shippers who consigned livestock through these markets. Any attempt to translate them into fees collected from actual consignments of hogs during that year must necessarily be based on calculations made in a somewhat arbitrary manner. However, since comparatively few hogs were trucked in 1915, the posted rates would probably more nearly represent actual charges at that time than would be obtained by using posted rates for the same purpose during more recent years.

By assuming that the average weight of hogs per head and the average number of hogs received per car at the Chicago market during that year were representative of other public markets, it is possible to calculate the approximate cost to shippers. Based on these assumptions and estimating an allowance of 8 bushels of corn per single-deck car, the average charges for selling and handling hogs at a large number of public markets in 1915 were about as follows:

Commission per car.....	\$8. 00
Yardage per car ($\$0.08 \times 76$).....	6. 08
Feed per car (8 bushels $\times \$1.25$).....	10. 00
Inspection per car.....	. 15
Switch fee per car.....	2. 00
Total charge per single-deck car.....	26. 23

Taking 76 hogs averaging 219 pounds each as the average load of single-deck car it would appear that public-market charges were approximately 15.8 cents per 100 pounds at that time.

A study of public-market charges for handling and selling livestock in the United States for the year 1917 was made by the Federal Bureau of Markets. The original data for this study were taken from the account sales of 13,890 head of hogs consigned by country shippers located chiefly in the Corn Belt (13); the range and average charges per 100 pounds were:

Corn, 8 to 9 cents, average.....	Cents 8. 5
Commission, 4 to 9 cents, average.....	6. 0
Other costs, 4 to 5 cents, average.....	4. 5
Total cost per 100 pounds.....	19. 0

The number of hogs included in the study is considered a comparatively small sample, but the shipments originated over a wide area and hence appear to be representative transactions of Corn Belt shipments during 1917.

Two comprehensive studies of public-market charges for handling and selling hogs in 1921 have been made, one by the Bureau of Agricultural Economics and the other by the Packers and Stock Yards Administration. The former included a sample totaling over 500,000 hogs. Representatives of the Bureau visited 237 cooperative livestock shipping associations in the Corn Belt and tabulated from account sales the charges assessed against the hogs consigned to eight public markets, including Chicago, South St. Paul, South St. Joseph, Kansas City, Omaha, Sioux Falls, Buffalo, and Pittsburgh. The combined average charges for feed, yardage, and commission were considerably higher at the eastern than at the midwestern markets.

Charges ranged from a minimum of 16.0 cents per 100 pounds at Omaha to 22.3 cents at Pittsburgh, the average being 19.0 cents.²⁷ This range was due chiefly to the differences in charges for feed, although the variation in the average weight of the hogs received at different markets also influenced the charges per hundredweight at those markets.

In addition to feed, yardage, and commission, other minor charges are encountered at public markets. These include such incidental items as switching fee, weighing, insurance, etc. From the original data it was possible to tabulate these other charges which averaged 1.4 cents per 100 pounds. This gave a total of 20.4 cents per 100 pounds as the average public-market charges for handling and selling straight carloads of hogs for 237 Corn Belt shipping associations in 1921. The data used in this study did not include drive-ins or hogs which were loaded with cattle and sheep.

The study made by the Packers and Stock Yards Administration included five public markets—those at Omaha, Portland, South St. Paul, Pittsburgh, and Fort Worth.²⁸ Tabulations were made from accounts of sale and included all charges collected on all straight carloads of hogs sold by all commission firms on these markets during 1921.

These charges were 17.4 cents per 100 pounds at Omaha, 20.4 cents at Fort Worth, 21.0 cents at South St. Paul, 23.0 cents at Pitts-

²⁷ UNITED STATES DEPARTMENT OF AGRICULTURE, BUREAU OF AGRICULTURAL ECONOMICS. See pp. 2, 4, of reference cited in footnote 26.

²⁸ Unpublished records of Packers and Stock Yards Division, Bureau of Animal Industry.

burgh, and 29.0 cents at Portland. The market charges per 100 pounds are greatly influenced by the average weight of the hogs. For example, on a per-head basis, the charges at Omaha were 44.2 cents, at Pittsburgh 42.5 cents, and at Fort Worth 36.0 cents. On a per 100-pound basis, however, charges at Pittsburgh and Fort Worth were higher than those at Omaha. This difference was due to the fact that most of the market charges were on a per head or per car basis. Hogs received at Omaha in 1921 average 255 pounds, as compared with the 186-pound average at Pittsburgh and the 179-pound average at Fort Worth; consequently there were fewer animals per car at Omaha than at the other markets. With varying weights and varying number of hogs per car, neither the per head nor the per car basis are as satisfactory as the per 100-pound basis for expressing and comparing market charges.

The total charges at these markets were also greatly influenced by the kind, quantity, and price of the grain fed. Wheat was the principal grain fed at Portland; this resulted in an average feed cost of 13.5 cents per 100 pounds as compared with 3.1 cents at Omaha, 4.7 cents at Fort Worth, and 5.0 cents at South St. Paul. At the Pittsburgh market "yardage" included the charges for both yardage and corn; hence no comparison can be made with respect to these items.

These two separate studies, one by the Bureau of Agricultural Economics and the other by the Packers and Stock Yards Administration, appear to be in close agreement as to the charges for handling and selling hogs at public markets in 1921. Results of the former study indicate an average charge of 20.4 cents per 100 pounds. In arriving at an average of the charges at the five public markets included in the latter study, it is evident that a simple arithmetic average would be too high to be representative of the principal hog-marketing territory, owing to the high feed charges and relatively light receipts at the Portland market. It appears that a simple average of the charges at Omaha, South St. Paul, Fort Worth, and Pittsburgh would more nearly represent the experience of the average shipper. This gives an average of 20.4 cents per 100 pounds. The same result would be obtained by taking the median of the charges at these five markets. Consequently the two separate studies are in agreement as to the cost of handling and selling straight carloads of hogs at public markets in 1921. Charges would have been somewhat higher, however, for consignments consisting of mixed hogs and drive-ins. On basis of these studies, marketing charges at representative public markets in 1921 averaged 20.4 cents per 100 pounds as compared with 19.0 cents in 1917 and 15.8 cents in 1915.

A more recent study made by the Bureau of Railway Economics indicates somewhat higher public-market charges from 1924 to 1929 than those prevailing at the time the earlier studies were made. This study was based on a sample of account sales on straight carloads of hogs, as rendered by representative commission firms at 10 public markets, including Baltimore, Chicago, East St. Louis, Fort Worth, Jersey City, Kansas City, Lancaster, Nashville, Omaha, and South St. Paul. The data include a total of 7,908 cars or 622,518 hogs (2). The average charges, including feed and bedding en route, ranged from 23.0 cents to 26.0 cents per 100 pounds, with a weighted average of 24.0 cents during the 6-year period 1924-29. Since feed and bedding en route are not public-market charges, these items

should not be included. As the original data were not available, however, it was not possible to isolate all of the extraneous items. It was felt that approximately the same result would be obtained by selecting shipments to public markets from States where little or no feeding is done or bedding used en route. A sample of 466,296 hogs consigned to five Corn Belt public markets was obtained by this method. The weighted average public-market charges for these consignments was 23.0 cents per 100 pounds.

That public-market charges on hogs have been on a somewhat lower level since 1929 is indicated by a study of these charges at the following six markets for the years indicated: Sioux City, 1929; South St. Joseph and South St. Paul, 1930; East St. Louis and Kansas City, 1931; and Chicago, 1932. These charges ranged from 19.5 cents to 22.9 cents per 100 pounds, with a weighted average of 21.1 cents.²⁹

From data supplied by the livestock shipping associations, in Iowa County, Iowa, it appears that the downward trend in charges for handling and selling hogs at Chicago and Buffalo began about 1930. This study included a sample of 234,942 hogs shipped to the Chicago market from 1923 to 1933, and 14,934 consigned to the Buffalo market from 1923 to 1932 (table 42). Maximum charges at Chicago during this period amounted to 26 cents per 100 pounds in 1928, followed by a decline to 19 cents in 1932, with an increase to 20.5 cents in 1933. These figures do not include switching fee or other incidental charges at the market. Charges at Buffalo declined from 28 cents per 100 pounds in 1929 to 21.2 cents in 1932.

TABLE 42.—*Public-market charges for handling and selling hogs paid by livestock shipping associations in Iowa County, Iowa, 1923–33*

Year	Charges on hogs sold at Chicago		Charges on hogs sold at Buffalo		Year	Charges on hogs sold at Chicago		Charges on hogs sold at Buffalo	
	Per 100 pounds	Percentage of net returns	Per 100 pounds	Percentage of net returns		Per 100 pounds	Percentage of net returns	Per 100 pounds	Percentage of net returns
	<i>Cents</i>	<i>Percent</i>	<i>Cents</i>	<i>Percent</i>		<i>Cents</i>	<i>Percent</i>	<i>Cents</i>	<i>Percent</i>
1923-----	20.3	3.1	25.9	3.4	1929-----	22.5	2.4	28.0	2.8
1924-----	23.5	3.2	33.6	4.7	1930-----	20.8	2.4	26.2	2.8
1925-----	24.4	2.3	26.4	2.3	1931-----	19.8	3.9	24.9	3.6
1926-----	21.0	1.8	26.0	2.1	1932-----	19.0	5.5	21.2	6.1
1927-----	22.0	2.4	25.8	2.5	1933-----	20.5	5.0	-----	-----
1928-----	26.0	3.0	26.3	3.1					

The decline in feed prices and the smaller quantities of corn fed to motor-truck hogs account to a considerable extent for the reduction in cost of selling hogs at public markets during recent years. At some markets commission charges have been reduced by order of the Secretary of Agriculture. Average yardage charges per head, however, have tended to remain at the previous level or to increase somewhat owing to the increasing proportion of drive-ins for which a somewhat higher charge was made per hog.

Although public-market charges have declined slightly during the depression it is clear that the sharp drop in hog prices made these charges seem more of a burden to the hog farmer. When prices of

²⁹ Unpublished data from commission-rate hearings by Packers and Stock Yards Division, Bureau of Animal Industry.

farm products are low farmers always try to avoid unnecessary cash expenses either in production or in marketing.

This situation was emphasized in replies to questionnaires received from more than 12,000 hog farmers in 15 States. Many farmers said they sold direct in order to avoid charges for marketing hogs at public markets. Some referred specifically to charges made for feed, some to charges for yardage and others to selling commissions. Some farmers who stated a preference for public markets and who sold their hogs there, also complained of these charges.

No attempt was made in connection with this study to ascertain the reasonableness of public-market charges. The analysis was confined to a study of the amount of these charges, the changes that have taken place over a period of years, and an appraisal of the relationship of these charges to the growth of direct marketing.

SHRINKAGE IN TRANSIT IN RELATION TO DIRECT MARKETING ³⁰

Shrinkage in transit, or loss in weight of hogs between the farm and the place of slaughter, is a factor to be taken into account in the marketing of hogs. The nature of such shrinkage and whether it tends to be different when hogs are marketed direct than when marketed through public markets were given consideration.

Shrinkage in transit may be due to elimination of excretions or to loss in tissue weight, both of which are intimately associated with the physiological functioning of the animal body. It is difficult to determine the precise amount of shrinkage due to each. The feed consumed furnished nutriment for building body tissue, and the broken-down tissue is eliminated through the excretory system, respiratory system, and skin. For purposes of this discussion, excretory shrinkage is defined as the loss in weight resulting from the elimination of excretions, which is usually referred to as the elimination of "fill." The decrease in the dressed-body weight of hogs is designated as tissue shrinkage.

An animal which has been fed and watered is referred to in the trade as having been "filled", the degree of "fill" being dependent upon the quantity of feed and water that the animal retains. When the intestinal and bladder contents have been largely removed, the animal is referred to as having had the fill "eliminated", or the animal is "shrunk out."

Packers buy hogs on the basis of the amount of dressed carcass which the hogs will yield when slaughtered. The weight of the carcass is not affected by the amount of fill. That part of the shrinkage resulting from the elimination of excretions or fill, therefore, cannot be considered a marketing cost. By the same token, if the filling of hogs does not increase the weight of the carcass, the fill given such hogs, on the average, does not result in an advantage to either buyer or seller. The extent to which hogs are filled at the time of sale may affect the relationship between buyer and seller of specific lots of hogs, since it is not possible to estimate precisely the weight of carcass which hogs will yield, but the advantages which may accrue to the seller on some transactions are offset by advantages to the buyer on others. If hogs are filled, expenses for feed must also be taken into account. Shrink-

³⁰ Extracts from the following: UNITED STATES DEPARTMENT OF AGRICULTURE, BUREAU OF AGRICULTURAL ECONOMICS. SHRINKAGE IN TRANSIT AND DRESSING YIELDS OF HOGS PURCHASED DIRECT AND AT PUBLIC MARKETS. Unpublished manuscript.

age that results from the loss in weight of body tissue, on the other hand, should be considered a marketing cost, and it is this shrinkage that is taken into consideration in this section.

The study of tissue shrinkage was based upon data on shrinkage in transit and on dressing yields of hogs which were made available by representatives of national, regional, and local packers. The records on more than 4,700,000 hogs were used in making the study. Tissue shrinkage was determined from the data on dressing yields. Dressing yields for hogs of a given weight decreased as time in transit increased. In brief, it was assumed that the difference between the dressing yield of hogs which had been transported various distances and the yield of similar hogs which had not been transported represented tissue shrinkage. Excretory shrinkage was determined by subtracting the amount of tissue shrinkage from total shrinkage.

The only shrinkage accounted for in this study was that which took place between the point where hogs were purchased and loaded, and the point to which they were shipped for slaughter. Whatever

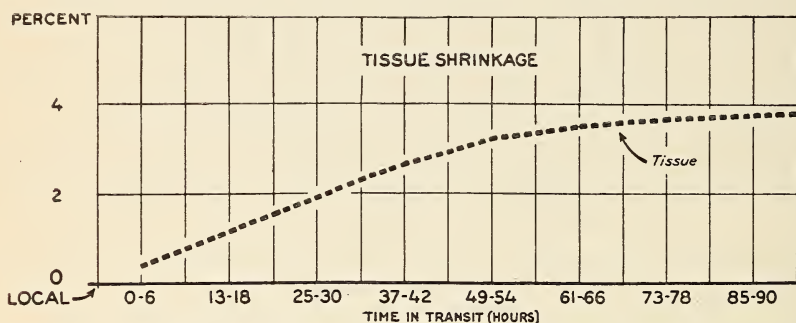


FIGURE 36.—TISSUE SHRINKAGE OF HOGS WEIGHING 180-199 POUNDS, IN TRANSIT DIFFERENT PERIODS OF TIME.

Tissue shrinkage increases as time in transit increases, but the rate of shrinkage tends to decrease after hogs have been en route 30-40 hours.

tissue shrinkage had taken place between the farm and the local shipping point or concentration yard was not considered because of lack of information. On the basis of findings in this study it appears reasonable to suppose that the amount of such shrinkage tended to be directly related to the time spent en route.

Tissue shrinkage increased as time in transit increased, the rate of increase tending to be greater during the earlier transit period than after hogs had been en route a longer time. Tissue shrinkage in transit took place at a higher rate for hogs of lighter weight than for hogs of heavier weight. Hogs weighing 180 to 199 pounds shrank in tissue, on an average, 2.4 percent of the live weight when in transit 36 hours, and 3.4 percent when in transit 60 hours, as is shown in figure 36.

The tissue shrinkage of hogs weighing 260 to 279 pounds averaged 1.3 percent of their live weight when they were in transit 36 hours and 2.1 percent when they were in transit 60 hours.

Tissue shrinkage appears to begin early in the period in transit and to continue until hogs reach the packing plant and are slaughtered. The loss in tissue weight is doubtless caused by the disturbing conditions to which hogs are subjected when moved from the farm to the

place of slaughter. It appears that hogs that have become disturbed in transit are likely to continue to lose tissue weight even if they are given feed and water. The disturbance of handling and the continued change from one environment to another tend to affect the nervous system and thus serve to retard the process of building tissue and to accelerate the process of breaking down body tissue.

The time required for moving hogs from the farm to the slaughtering plants varies considerably among lots of hogs marketed by the same general methods. Some lots marketed through direct channels will move directly from the farm to the slaughtering plant, whereas others may require more time because they pass through a concentration yard or other intermediary agency. Some hogs marketed through public markets may be offered for sale immediately upon delivery, whereas more often hogs consigned to public markets are given feed and water and are fitted for sale by the time the market opens but are not sold until later and are not removed from the yards until later in the day. On an average, however, less time is required to move hogs from the farm to the slaughtering plant when they are sold direct than when they are consigned for sale at a public market.

CHAPTER 12

RELATIVE PRICES PAID FOR HOGS BOUGHT DIRECT AND AT PUBLIC MARKETS

When packers buy hogs direct do they pay more or less for them than they would pay in the public markets? Statistical data on this point have generally been fragmentary and inadequate. An important part of the present study therefore was the gathering of data on prices and costs of hogs to packers who bought both at public markets and direct. These data were used to compare costs of the same grades and weights of hogs bought by the same packers on the same days in public markets and direct.

Some packers included in this comparison purchased hogs direct through their own concentration yards, whereas some purchased hogs direct at other concentration yards, from other hog assemblers, and hogs delivered at their plants. Comparisons in each case were made between the cost of hogs bought direct and the cost of those bought at the public market where the packing plant was located. The analysis was based on records of 675,301 hogs purchased by these packers in 1933, or for a period in 1934 for plants where records were available for only part of the former year.

The records obtained for a given plant covered all purchases for alternate months, or every third month of the year 1933, but at one plant data for 4 consecutive months for 1934 were used. Data were obtained for all hogs purchased during these periods, but records for a large number could not be used because purchases of hogs of the same grade and weight were not made at both types of markets on the same day. The following information, or as much of it as was applicable and available, was obtained for each lot of hogs; date of purchase, place of purchase, purchased weight, invoice cost, freight charges, feed and bedding supplied at concentration yards or en route, switching or trucking charges at destination, service fees, yardage, insurance, commission to order buyers, number and weight of dead hogs, number and weight of condemned hogs, unloading weight, and dressed weight. The cost of buying at public markets and buying direct was also included.

Comparisons of cost to packers were made on the basis of dressed weight of carcasses, and not on the live weight of hogs. This was because there may have been some differences in the carcass yields of hogs of the same weight and grade and because carcass yield is the best basis for comparing costs of live hogs. The methods of dressing hogs and of recording dressed weights may vary among packers. Some include in dressed weight the complete carcass, whereas others may deduct the weight of one or more of the following: Head, kidneys, leaf fat, and ham facings. Some record the warm weight of the carcass and some the chilled weight. In order to have the dressed weights of all hogs on a comparable basis, adjustments were made in the records wherever necessary so that all weights represented the

complete carcass in terms of warm weight, with head, kidneys, leaf fat, and ham facings included. In lots in which there were dead hogs, or condemned carcasses or heads, adjustments were made in the weights before the dressed cost was computed. Hogs were classified in groups on the basis of live weight. At plants where hogs were not graded the average live weight of the lot became the basis for weight classification. Where packers had their own grade and weight classification these were fitted into the established classification in order to have them all on a comparable basis. Comparisons were made on the basis of butcher hogs of Good and Choice quality, except for some purchases by two packers which included hogs of medium grade and packing sows. Data on costs of crippled and rough hogs and light pigs were not included in the comparisons.

The weighted average dressed cost of hogs bought was determined for each day for each grade and weight classification. Where hogs were purchased by a packer on the basis of grades but slaughtered together and the dressed weight recorded for the lot, adjustments were made in the proportionate amount of dressed weight assignable to each grade. This adjustment was based on a study of dressing yields of hogs of different weights made by the Bureau of Agricultural Economics.

Comparisons of costs to each packer on a dressed basis were made by determining the differential between the costs of each grade and weight of hogs bought direct and the cost of the same grades and weights bought at the local public market on the same day. The average of these daily differentials and the range in the differentials are shown in table 43. Differentials which are marked plus (+) signify that costs of direct hogs were above the cost of hogs bought at public markets; and those which are marked minus (—) indicate a lower cost of direct hogs than of hogs bought in public markets.

TABLE 43.—*Differences in cost of hogs to packers at packing plants when bought direct and at public markets where their plants were located, 1933-34*

Weight and grade of hogs	Hogs in group	Difference in cost ¹ per 100 pounds			
		Basis, dressed weight		Basis, live weight ²	
		Daily average	Range	Daily average	Range
	Number	Cents	Cents	Cents	Cents
Light light (below 160 pounds) Good and Choice.	7, 381	-4	-144 to +139	-3	-105 to +101
Lightweight (160-199 pounds) Good and Choice.	62, 104	+2	-194 to +79	+2	-146 to +59
Medium weight (200-249 pounds) Good and Choice.	378, 641	+6	-96 to +86	+5	-74 to +66
Heavy weight (250-349 pounds) Good and Choice	113, 004	+6	-59 to +114	+5	-46 to +89
Extra heavy weight (350 pounds and over) Good and Choice.	6, 929	+4	-105 to +154	+3	-82 to +121
All weights, Medium.	71, 068	+13	-56 to +176	+10	-45 to +136
Light packing sows (under 360 pounds).	13, 533	0	-156 to +79	0	-122 to +62
Heavy packing sows (over 360 pounds).	22, 641	-10	-55 to +28	-8	-42 to +22

¹ These differences include cost of buying. Plus (+) differences signify that hogs bought direct cost more than those bought at public markets. Minus (—) differences signify that hogs bought direct cost less.

² Cost of hogs per 100 pounds live weight was determined from the cost of dressed carcasses by applying conversion factors representing average dressing yields for each group.

Table 43 compares costs of hogs both on the dressed basis and on the live basis. The live-weight comparisons found on the right-hand side of the table were calculated from the differences in cost of dressed carcasses by applying the average dressing percentage for each grade and weight classification as determined by earlier studies of the Bureau.

The data gathered indicate that hogs of the more desirable butcher weights cost packers more, on an average, when bought direct than when bought at the public markets where their plants were located. Lightweight unfinished hogs weighing less than 160 pounds and heavy packing sows cost, on an average, less when bought direct than when bought at public markets. Lightweight packing sows were bought direct by these packers at about the same average price as they paid for the same kind of hogs at public markets.

The above conclusions relate to average differentials in cost. It should be noted that these differentials varied decidedly from day to day, and also among individual lots. Butcher hogs of the more desirable killing weights, although costing on an average more when bought direct than when bought at public markets, on certain days cost less. Lightweight butcher hogs and heavy packing sows costing on an average less than similar hogs bought at public markets, cost more on certain days. The range in these differences for individual days, based on the cost of both dressed and live weight of hogs bought by the two different methods by a given packer, varied considerably. The range in these differences for individual days, based on both dressed cost and live cost per 100 pounds by grades of hogs is also shown in table 43.

The cost to packers of hogs bought direct as compared with the cost of hogs bought at public markets does not measure the relative returns to farmers who furnished these hogs. Sale of hogs to packers at a public market entailed selling costs which direct sales did not. Costs of selling at the public markets where these hogs were bought include yardage, feed, selling commission, and minor incidental costs, whereas hogs which were bought direct incurred no selling costs, with the possible exception of a small proportion of the hogs which may have been fed before they were sold at concentration yards.

Other important factors which are involved in making a comparison of the net returns to producers of selling hogs direct and at public markets are relative amount of shrinkage in transit, the degree of fill at the time of sale, and transportation costs. The type of transportation and the services rendered by transportation agencies may be quite different in cases when hogs are sold direct from what they are when hogs are sold at public markets. Consequently difficulties are involved in making precise cost comparisons between selling hogs direct and selling them at public markets. It is apparent, however, that the cost of selling hogs at public markets usually exceeds the cost of selling hogs direct.

A study of price relationships between interior and public markets and observations made by field representatives of prices paid at the different outlets also indicated that prices for the more desirable grades and weights of butcher hogs at concentration yards and interior packing plants averaged higher than at public markets. On the other hand, prices paid for unfinished hogs and rough hogs were generally discounted at direct buying points. This was also indicated by comments on the questionnaires.

For reasons why public-market packers increased direct buying see the discussion in chapter 2.

COMPARATIVE RETURNS TO PRODUCERS

It is very difficult to make accurate comparisons between prices received by producers for hogs sold direct and prices received for hogs sold at public markets. This chapter, together with the one on marketing costs, clearly indicates that on an average the producer has received somewhat more for the hogs marketed direct than he would have received for the same hogs if they had been sold through the public markets.

This general conclusion is borne out by several other facts. One is that nearly two-thirds of the farmers selling direct and answering the questionnaire stated that their principal reason for selling direct was that returns were higher. Only about one-fourth of the farmers selling through public stockyards gave higher returns as their reason. This would tend to indicate that, although some farmers believe they receive more for the hogs sold through public markets, many more are of the opposite opinion.

The conclusions are also borne out by the observations of the field men who discussed this question with hundreds of hog producers. Although the opinion was found to be divided, the great majority of producers believed that the returns from direct sales were higher than returns from public-market sales.

Furthermore, studies made at Iowa State College of the returns to cooperative associations selling direct, as compared with returns to associations selling through public markets, support the same conclusions. A study made at Ohio State University³¹ showed that cooperative associations in seven Ohio counties netted more from their direct sales in 1926, 1927, and 1928 than they would have received in the Pittsburgh public market even if they had been paid the top quotation. Similar conclusions were reached in a study in Indiana in 1927 (9), which indicated that a cooperative association received an average of 20.9 cents per 100 pounds more for direct sales than the top quotations in the public markets in which the association usually sold hogs.

Although it is difficult to make precise and accurate comparisons of net returns to farmers for direct sales and for public-market sales, all the available evidence tends to indicate that the average returns from direct sales have been somewhat greater, at least during recent years. This has doubtless been an important cause of the rapid expansion of direct marketing.

³¹ STOUT, W. B., ANALYSIS OF DIRECT TO PACKER MARKETING OF HOGS IN OHIO, p. 113. Ph. D. Thesis Dept. Rural Econ., Ohio State Univ.

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APPENDIX

TABLE 44.—*Livestock slaughter under Federal inspection and source of purchase,*¹
1923-33

CATTLE

Calendar year	Slaughter under Federal inspection	Number purchased		Percentage purchased	
		At public stock yards	From other sources	At public stock yards	From other sources
	<i>Thousands</i>	<i>Thousands</i>	<i>Thousands</i>	<i>Percent</i>	<i>Percent</i>
1923.....	9,163	8,209	954	89.6	10.4
1924.....	9,593	8,704	889	90.8	9.2
1925.....	9,853	8,338	915	90.7	9.3
1926.....	10,180	9,137	1,043	89.8	10.2
1927.....	9,520	8,555	965	89.9	10.1
1928.....	8,467	7,610	857	89.9	10.1
1929.....	8,324	7,398	926	88.9	11.1
1930.....	8,170	7,210	960	88.2	11.8
1931.....	8,108	7,077	1,031	87.3	12.7
1932.....	7,625	6,452	1,173	84.6	15.4
1933.....	8,655	7,225	1,430	83.5	16.5

CALVES

1923.....	4,500	3,870	630	86.2	13.8
1924.....	4,935	4,294	641	87.1	12.9
1925.....	5,353	4,662	691	87.2	12.8
1926.....	5,153	4,393	760	86.3	14.7
1927.....	4,876	4,099	777	84.2	15.8
1928.....	4,680	3,981	699	85.1	14.9
1929.....	4,489	3,746	743	83.4	16.6
1930.....	4,595	3,758	837	81.8	18.2
1931.....	4,717	3,758	959	79.7	20.3
1932.....	4,494	3,386	1,108	75.4	24.6
1933.....	4,907	3,615	1,292	73.7	26.3

HOGS

1923.....	53,334	40,532	12,802	76.0	24.0
1924.....	52,873	41,242	11,631	78.0	22.0
1925.....	43,043	32,714	10,329	76.0	24.0
1926.....	40,636	29,620	11,016	72.9	27.1
1927.....	43,633	29,497	14,136	67.6	32.4
1928.....	49,795	32,132	17,663	64.5	35.5
1929.....	48,445	28,960	19,485	59.8	40.2
1930.....	44,266	26,504	17,762	59.9	40.1
1931.....	44,772	25,881	18,891	57.8	42.2
1932.....	45,245	25,774	19,471	56.9	43.1
1933.....	47,226	26,518	20,708	56.2	43.8

SHEEP AND LAMBS

1923.....	11,529	9,842	1,687	86.0	14.0
1924.....	11,991	9,996	1,995	84.6	15.4
1925.....	12,001	9,884	2,117	82.4	17.6
1926.....	12,961	10,968	1,993	84.6	15.4
1927.....	12,883	11,004	1,879	85.4	14.6
1928.....	13,488	11,642	1,846	86.3	13.7
1929.....	14,023	11,778	2,245	84.0	16.0
1930.....	16,697	14,137	2,560	84.7	15.3
1931.....	18,071	14,940	3,131	82.7	17.3
1932.....	17,899	14,351	3,548	80.2	19.8
1933.....	17,354	13,661	3,693	78.8	21.2

¹ These data are based on monthly reports to the Bureau of Agricultural Economics from most of the wholesale slaughterers operating under Federal inspection. These reports show packers' purchases at public stockyards and their purchases from all other sources. The latter are interpreted to be direct purchases.

TABLE 45.—Hogs marketed and number going direct to packers¹ from nine Corn Belt States, by States and by groups, 1920–33

[In thousands; i. e., 000 omitted]

Year	2 eastern Corn Belt States						2 southwestern Corn Belt States					
	Illinois		Wisconsin		Total		Missouri		Kansas		Total	
	Total marketed	Marketed direct	Total marketed	Marketed direct	Total marketed	Marketed direct	Total marketed	Marketed direct	Total marketed	Marketed direct	Total marketed	Marketed direct
1920-----	4,775	226	1,650	377	6,425	603	3,220	363	1,629	232	4,849	595
1921-----	4,896	265	1,828	518	6,724	783	3,584	495	1,762	290	5,347	786
1922-----	4,644	291	1,750	607	6,394	898	4,109	710	2,347	472	6,456	1,182
1923-----	6,149	373	2,178	853	8,327	1,226	5,189	788	3,235	614	8,423	1,401
1924-----	6,203	374	2,096	687	8,299	1,061	4,756	757	3,040	591	7,796	1,348
1925-----	4,978	310	1,686	563	6,664	873	3,841	1,003	2,455	444	6,296	1,446
*1926-----	4,546	249	1,962	605	6,508	854	3,670	921	2,155	362	5,825	1,283
1927-----	4,797	227	2,161	700	6,958	927	4,131	1,089	1,955	341	6,085	1,430
1928-----	5,605	346	1,892	657	7,497	1,003	4,665	1,083	2,526	472	7,191	1,556
1929-----	5,262	353	1,817	730	7,079	1,083	4,499	1,030	3,203	586	7,702	1,616
1930-----	4,995	581	1,761	757	6,756	1,338	3,941	898	2,889	718	6,830	1,616
1931-----	4,966	787	1,920	807	6,886	1,594	3,519	988	2,474	753	5,993	1,741
1932-----	5,322	1,327	1,657	769	6,979	2,096	4,119	1,605	2,991	875	7,110	2,481
1933-----	6,889	1,568	1,491	811	8,380	2,379	4,916	2,271	2,964	1,053	7,880	3,324

Year	5 northwestern Corn Belt States										9 Corn Belt States			
	Minnesota		Iowa		North Dakota		South Dakota		Nebraska				Total	
	Total marketed	Marketed direct	Total marketed	Marketed direct	Total marketed	Marketed direct	Total marketed	Marketed direct	Total marketed	Marketed direct	Total marketed	Marketed direct	Total marketed	Marketed direct
1920-----	2,637	669	8,666	2,830	221	(²)	1,785	322	3,437	193	16,746	4,014	28,020	5,212
1921-----	2,915	954	8,984	3,139	274	15	1,880	314	3,584	344	17,636	4,765	29,706	6,384
1922-----	3,396	1,130	9,689	3,765	312	19	2,241	353	4,166	445	19,804	5,712	32,654	7,792
1923-----	4,406	1,455	13,316	4,984	503	27	3,134	465	5,819	538	27,178	7,470	43,928	10,097
1924-----	4,780	1,605	13,790	5,015	758	33	3,321	543	6,554	644	29,203	7,840	45,298	10,249
1925-----	4,378	1,501	10,894	4,062	832	39	3,062	677	5,688	869	24,854	7,149	37,814	9,468
1926-----	4,496	1,664	10,678	4,563	762	165	2,659	1,113	4,904	702	23,499	8,206	35,832	10,343
1927-----	4,694	1,844	11,550	5,660	569	192	2,152	1,039	4,467	682	23,432	9,417	36,475	11,774
1928-----	4,450	1,878	13,130	6,802	656	217	3,212	1,713	5,691	1,207	27,140	11,817	41,828	14,376
1929-----	4,399	2,064	12,431	7,609	858	294	2,980	1,712	5,760	1,245	26,428	12,924	41,209	15,623
1930-----	4,574	2,140	12,251	7,520	708	262	2,966	1,535	5,317	664	25,816	12,121	39,402	15,075
1931-----	5,339	2,472	13,181	7,853	965	476	3,662	1,893	5,640	859	28,786	13,554	41,665	16,889
1932-----	4,801	2,403	12,518	8,232	716	445	1,890	1,111	5,751	1,392	25,676	13,583	39,765	18,160
1933-----	4,492	2,459	11,704	8,187	600	367	2,048	1,323	5,167	1,379	24,011	13,715	40,271	19,418

¹ The numbers shown as marketed direct do not include hogs going direct to packers through the public stockyards at the points where the receiving plant is located, except at Chicago where the "packer directs" passing through the public stockyards are reported separately. These numbers also do not include hogs moving direct to packers in California.

² No record.

TABLE 46.—*Corn acreage, by groups of States, 1900–1933*

Year	5 east- ern Corn Belt States ¹	2 south- western Corn Belt States ²	5 north- western Corn Belt States ³	All other States	United States	Year	5 east- ern Corn Belt States ¹	2 south- western Corn Belt States ²	5 north- western Corn Belt States ³	All other States	United States
	<i>1,000 acres</i>	<i>1,000 acres</i>	<i>1,000 acres</i>	<i>1,000 acres</i>	<i>1,000 acres</i>		<i>1,000 acres</i>	<i>1,000 acres</i>	<i>1,000 acres</i>	<i>1,000 acres</i>	<i>1,000 acres</i>
1900.....	22,630	15,172	19,298	37,752	94,852	1917.....	23,875	17,176	25,930	43,912	110,893
1901.....	22,855	14,386	19,833	37,348	94,422	1918.....	22,410	13,430	23,500	42,855	102,195
1902.....	23,375	14,690	20,496	38,616	97,177	1919.....	21,641	10,642	24,225	41,637	98,145
1903.....	22,870	13,757	19,111	37,817	93,555	1920.....	22,302	11,977	26,310	40,770	101,359
1904.....	23,155	13,357	20,675	38,041	95,228	1921.....	21,576	10,734	26,458	44,387	103,155
1905.....	22,375	14,122	20,719	38,530	95,746	1922.....	21,441	11,445	26,864	41,195	100,345
1906.....	22,590	13,799	20,744	38,495	95,624	1923.....	20,840	12,275	29,119	38,289	101,123
1907.....	22,280	14,167	20,750	38,897	96,094	1924.....	20,812	12,356	30,359	36,893	100,420
1908.....	21,555	13,886	20,640	39,204	95,285	1925.....	21,693	13,463	30,462	35,713	101,331
1909.....	22,538	15,329	21,089	41,244	100,200	1926.....	21,134	12,252	30,778	35,288	99,452
1910.....	22,325	16,450	21,575	41,917	102,267	1927.....	19,370	12,037	30,356	36,594	98,357
1911.....	22,030	15,557	22,380	41,426	101,393	1928.....	20,781	13,248	30,565	35,742	100,336
1912.....	22,345	15,185	23,105	40,816	101,451	1929.....	19,440	12,209	31,023	35,134	97,806
1913.....	22,195	14,800	23,365	39,846	100,206	1930.....	20,134	13,121	31,613	36,215	101,083
1914.....	22,035	13,220	23,875	38,666	97,796	1931.....	21,341	13,045	32,697	38,865	105,948
1915.....	22,100	12,770	24,190	41,563	100,623	1932.....	21,016	13,834	33,872	39,946	108,668
1916.....	22,170	14,350	23,685	40,356	100,561	1933.....	19,595	13,013	31,859	38,793	103,260

¹ Ohio, Indiana, Illinois, Michigan, and Wisconsin.² Kansas and Missouri.³ Iowa, Nebraska, Minnesota, North Dakota, and South Dakota.TABLE 47.—*Corn production, by groups of States, 1900–1933*

Year	5 east- ern Corn Belt States ¹	2 south- western Corn Belt States ²	5 north- western Corn Belt States ³	All other States	United States	Year	5 east- ern Corn Belt States ¹	2 south- western Corn Belt States ²	5 north- western Corn Belt States ³	All other States	United States
	<i>Million bushels</i>	<i>Million bushels</i>	<i>Million bushels</i>	<i>Million bushels</i>	<i>Million bushels</i>		<i>Million bushels</i>	<i>Million bushels</i>	<i>Million bushels</i>	<i>Million bushels</i>	<i>Million bushels</i>
1900.....	916	369	685	692	2,662	1917.....	848	388	803	869	2,908
1901.....	582	130	447	557	1,716	1918.....	793	189	706	753	2,441
1902.....	897	509	677	691	2,774	1919.....	801	234	802	842	2,679
1903.....	782	382	562	789	2,515	1920.....	831	349	986	905	3,071
1904.....	824	314	706	843	2,687	1921.....	790	292	942	904	2,928
1905.....	909	438	769	838	2,954	1922.....	747	277	905	778	2,707
1906.....	902	425	808	898	3,033	1923.....	796	328	1,036	715	2,875
1907.....	815	375	605	818	2,613	1924.....	607	309	752	630	2,298
1908.....	735	338	662	832	2,567	1925.....	924	321	976	632	2,853
1909.....	869	349	663	730	2,611	1926.....	765	242	828	740	2,575
1910.....	860	418	708	867	2,853	1927.....	603	355	973	747	2,678
1911.....	791	311	643	730	2,475	1928.....	758	376	936	645	2,715
1912.....	875	418	829	826	2,948	1929.....	654	247	980	655	2,536
1913.....	720	153	659	741	2,273	1930.....	533	170	865	497	2,065
1914.....	741	270	768	745	2,524	1931.....	798	293	719	779	2,589
1915.....	813	385	712	919	2,829	1932.....	825	334	1,060	688	2,907
1916.....	695	214	755	761	2,425	1933.....	585	222	878	667	2,352

¹ Ohio, Indiana, Illinois, Michigan, and Wisconsin.² Kansas and Missouri.³ Iowa, Nebraska, Minnesota, North Dakota, and South Dakota.

TABLE 48.—*Livestock: Relationship of receipts at 9 markets¹ to wholesale slaughter in the United States, 1900–1933*

Year	Hogs			Cattle and calves			Sheep and lambs		
	Total wholesale slaughter in the United States	Receipts at 9 principal markets		Total wholesale slaughter in the United States	Receipts at 9 principal markets		Total wholesale slaughter in the United States	Receipts at 9 principal markets	
		Total	Percent- age of total wholesale slaughter		Total	Percent- age of total wholesale slaughter		Total	Percent- age of total wholesale slaughter
	<i>Thou- sands</i>	<i>Thou- sands</i>	<i>Percent</i>	<i>Thou- sands</i>	<i>Thou- sands</i>	<i>Percent</i>	<i>Thou- sands</i>	<i>Thou- sands</i>	<i>Percent</i>
1900.....	33,394	13,324	54.9	7,500	7,625	101.7	9,600	7,349	76.6
1901.....	35,429	20,135	56.8	8,000	8,215	102.7	11,000	8,010	72.8
1902.....	29,975	17,291	57.7	8,100	9,280	114.6	11,500	9,487	82.5
1903.....	30,671	16,861	55.0	9,300	10,092	108.5	11,500	10,234	89.0
1904.....	34,472	17,816	51.7	9,300	9,923	106.7	11,000	10,169	92.4
1905.....	36,655	19,262	52.5	9,500	10,909	114.8	11,000	11,391	103.6
1906.....	36,310	18,939	52.2	10,200	11,143	109.2	11,400	11,716	102.8
1907.....	37,785	19,251	50.9	11,300	11,564	102.3	11,300	10,742	95.1
1908.....	44,443	22,677	51.0	10,800	11,022	102.1	11,300	10,583	93.7
1909.....	35,995	18,926	52.6	11,500	11,504	100.0	12,600	11,046	87.7
1910.....	29,914	15,582	52.1	11,200	11,570	103.3	12,700	13,126	103.4
1911.....	39,233	20,720	52.8	10,500	10,790	102.8	15,900	14,327	90.1
1912.....	37,953	20,382	53.7	10,900	10,426	95.7	17,100	14,797	86.5
1913.....	39,399	20,576	52.2	10,500	10,329	98.4	16,400	14,986	91.4
1914.....	37,532	19,044	50.7	9,000	9,466	105.2	16,700	14,372	86.1
1915.....	43,781	21,840	49.9	10,200	10,057	98.6	13,900	12,288	88.4
1916.....	49,184	26,781	54.5	11,800	11,920	101.0	13,500	13,479	99.8
1917.....	38,210	22,360	58.5	18,000	15,034	83.5	10,600	12,484	117.8
1918.....	46,414	26,607	57.3	20,200	16,781	83.1	11,700	14,050	120.1
1919.....	46,812	26,237	56.0	18,300	15,932	87.1	13,800	16,847	122.1
1920.....	42,619	23,187	54.4	15,000	13,725	91.5	12,500	13,591	108.7
1921.....	43,782	22,798	52.1	13,700	12,150	88.7	15,100	13,580	89.9
1922.....	48,414	24,601	50.8	16,500	14,590	88.4	12,700	12,253	96.5
1923.....	59,834	32,320	54.0	17,300	15,012	86.8	13,400	13,191	98.4
1924.....	60,673	32,612	53.8	20,600	15,188	73.7	14,200	13,381	94.2
1925.....	50,043	26,415	52.8	20,900	15,206	72.8	13,900	13,166	94.7
1926.....	45,236	23,413	51.8	20,100	15,242	75.8	15,200	14,378	94.6
1927.....	48,333	23,616	48.9	17,700	14,020	79.2	14,900	13,555	91.0
1928.....	55,895	26,525	47.5	15,500	13,088	84.4	16,600	14,974	90.2
1929.....	54,545	25,450	46.7	15,200	12,575	82.7	16,500	15,548	94.2
1930.....	50,666	24,021	47.4	16,400	12,087	73.7	21,000	17,015	81.0
1931.....	50,772	23,805	46.9	16,200	11,770	72.7	23,300	19,118	82.1
1932.....	50,245	20,351	40.5	15,300	10,167	66.5	21,700	16,479	75.9
1933.....	² 58,400	³ 24,159	41.4	16,600	10,604	63.9	21,400	15,815	71.6

¹ Chicago, Denver, East St. Louis, Fort Worth, Kansas City, Omaha, South St. Joseph, South St. Paul, Sioux City.² Includes 6,200,000 pigs and sows slaughtered for account of Federal Government.³ Includes 4,236,023 pigs and sows slaughtered for account of Federal Government.

TABLE 49.—*Hogs: Receipts at 9 principal markets, United States, 1900 to 1933*

Year	Chi- cago	Denver	East St. Louis	Fort Worth	Kan- sas City	Omaha	South St. Joseph	South St. Paul	Sioux City
	<i>Thous- ands</i>	<i>Thous- ands</i>	<i>Thous- ands</i>	<i>Thous- ands</i>	<i>Thous- ands</i>	<i>Thous- ands</i>	<i>Thous- ands</i>	<i>Thous- ands</i>	<i>Thous- ands</i>
1900.....	8,109	116	1,792	-----	3,094	2,201	1,679	500	833
1901.....	8,290	109	1,924	-----	3,716	2,414	2,105	617	960
1902.....	7,895	87	1,330	79	2,279	2,247	1,698	668	1,008
1903.....	7,326	147	1,568	151	1,969	2,231	1,701	760	1,008
1904.....	7,239	162	1,955	281	2,227	2,300	1,657	882	1,113
1905.....	7,726	191	2,026	463	2,508	2,294	1,900	855	1,299
1906.....	7,275	193	1,923	551	2,676	2,394	1,908	861	1,158
1907.....	7,201	241	2,065	487	2,924	2,254	1,923	867	1,289
1908.....	8,131	280	2,560	703	3,715	2,425	2,349	1,133	1,381
1909.....	6,619	242	2,473	868	3,093	2,135	1,694	725	1,077
1910.....	5,587	187	2,054	541	2,086	1,894	1,353	836	1,044
1911.....	7,103	220	3,124	556	3,168	2,367	1,922	911	1,349
1912.....	7,181	222	2,530	388	2,523	2,886	1,970	984	1,698
1913.....	7,571	247	2,584	404	2,568	2,543	1,869	1,257	1,533
1914.....	6,618	256	2,559	515	2,265	2,259	1,725	1,590	1,257
1915.....	7,652	344	2,592	464	2,531	2,643	1,698	2,155	1,761
1916.....	9,188	467	3,057	968	2,979	3,117	2,199	2,675	2,131
1917.....	7,169	352	2,706	1,062	2,277	2,797	1,920	1,928	2,149
1918.....	8,614	384	3,256	762	3,328	3,430	2,351	2,061	2,421
1919.....	8,672	368	3,651	588	3,141	3,179	2,126	2,190	2,322
1920.....	7,526	341	3,399	413	2,466	2,708	1,914	2,247	2,173
1921.....	8,148	334	3,330	382	2,205	2,665	1,785	2,210	1,739
1922.....	8,156	395	3,606	510	2,655	2,839	2,061	2,523	1,856
1923.....	10,460	495	4,831	486	3,615	3,649	2,457	3,338	2,989
1924.....	10,443	569	4,580	392	2,933	3,978	2,234	3,751	3,732
1925.....	7,996	467	3,512	312	2,067	3,355	1,673	3,637	3,396
1926.....	7,093	497	3,536	217	2,036	2,647	1,462	3,451	2,475
1927.....	7,724	457	3,710	338	1,904	2,631	1,425	3,105	2,322
1928.....	8,539	567	4,036	432	2,391	3,179	1,724	2,902	2,754
1929.....	8,193	539	3,865	402	2,476	3,166	1,627	2,869	2,313
1930.....	7,870	512	3,459	279	2,015	3,363	1,446	2,759	2,317
1931.....	7,942	597	2,970	216	1,337	3,525	1,322	3,251	2,646
1932.....	6,602	652	2,626	255	1,356	3,078	1,226	2,600	1,955
1933 ¹	7,792	771	3,327	498	2,077	2,950	1,715	2,742	2,287

¹ Includes pigs and sows received and slaughtered on Government account, totaling 962,869 at Chicago 61,617 at Denver, 531,213 at East St. Louis, 111,562 at Fort Worth, 831,692 at Kansas City, 377,552 at Omaha 245,729 at South St. Joseph, 696,156 at South St. Paul, and 417,633 at Sioux City.

TABLE 50.—*Hogs: Receipts at 9 principal markets expressed as percentages of total wholesale slaughter, United States, 1900–33*

Year	Chica- go	Denver	East St. Louis	Fort Worth	Kan- sas City	Omaha	South St. Joseph	South St. Paul	Sioux City
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
1900	24.3	0.3	5.4	-----	9.3	6.6	5.0	1.5	2.5
1901	23.4	.3	5.4	-----	10.5	6.8	5.9	1.7	2.7
1902	26.3	.3	4.4	0.3	7.6	7.5	5.7	2.2	3.4
1903	23.9	.5	5.1	.5	6.4	7.3	5.5	2.5	3.3
1904	21.0	.5	5.7	.8	6.5	6.7	4.8	2.6	3.2
1905	21.1	.5	5.5	1.3	6.8	6.3	5.2	2.3	3.5
1906	20.0	.5	5.3	1.5	7.4	6.6	5.3	2.4	3.2
1907	19.1	.6	5.5	1.3	7.7	6.0	5.1	2.3	3.4
1908	18.3	.6	5.8	1.6	8.4	5.5	5.3	2.5	3.1
1909	18.4	.7	6.9	2.4	8.6	5.9	4.7	2.0	3.0
1910	18.7	.6	6.9	1.8	7.0	6.3	4.5	2.8	3.5
1911	18.1	.6	8.0	1.4	8.1	6.0	4.9	2.3	3.4
1912	18.9	.6	6.7	1.0	6.6	7.6	5.2	2.6	4.5
1913	19.2	.6	6.6	1.0	6.5	6.5	4.7	3.2	3.9
1914	17.6	.7	6.8	1.4	6.0	6.0	4.6	4.2	3.3
1915	17.5	.8	5.9	1.1	5.8	6.0	3.9	4.9	4.0
1916	18.7	.9	6.2	2.0	6.1	6.3	4.5	5.4	4.6
1917	18.8	.9	7.1	2.8	6.0	7.3	5.0	5.0	5.3
1918	18.6	.8	7.0	1.6	7.2	7.4	5.1	4.4	5.2
1919	18.5	.8	7.8	1.3	6.7	6.8	4.5	4.7	5.0
1920	17.7	.8	8.0	1.0	5.8	6.4	4.5	5.3	5.1
1921	18.6	.8	7.6	.9	5.0	6.1	4.1	5.0	4.0
1922	16.8	.8	7.4	1.1	5.5	5.9	4.3	5.2	3.9
1923	17.5	.8	8.1	.8	6.0	6.1	4.1	5.6	5.0
1924	17.2	.9	7.5	.6	4.8	6.6	3.7	6.2	6.2
1925	16.0	.9	7.0	.6	4.1	6.7	3.3	7.3	6.8
1926	15.7	1.1	7.8	.5	4.5	5.9	3.2	7.6	5.5
1927	16.0	.9	7.7	.7	3.9	5.4	2.9	6.4	4.8
1928	15.3	1.0	7.2	.8	4.3	5.7	3.1	5.2	4.9
1929	15.0	1.0	7.1	.7	4.5	5.8	3.0	5.3	4.2
1930	15.5	1.0	6.8	.6	4.0	6.6	2.9	5.4	4.6
1931	15.6	1.2	5.8	.4	2.6	6.9	2.6	6.4	5.2
1932	13.1	1.3	5.2	.5	2.7	6.1	2.4	5.2	3.9
1933 ¹	13.3	1.3	5.7	.9	3.6	5.1	2.9	4.7	3.9

¹ Based on wholesale slaughter which included 6,200,000 pigs and sows slaughtered for account of Federal Government. See table 49 for number received at these cities.

TABLE 51.—*Hogs: Percentage of "drive-ins" in receipts at selected markets, 1916–33*

Year	Sioux Falls	South St. Joseph	Sioux City	Omaha	East St. Louis	Kansas City	South St. Paul	Chicago
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
1916	-----	2.37	1.52	1.49	0.23	1.85	0.84	0.05
1917	5.80	2.94	1.50	2.36	.30	2.71	.96	.06
1918	6.34	5.15	2.91	5.49	.37	2.89	1.11	.10
1919	1.73	5.10	4.50	5.63	1.74	3.53	1.22	.32
1920	3.97	6.75	6.15	6.70	1.40	4.69	1.55	.44
1921	13.37	9.25	10.35	8.14	.80	5.49	1.91	.63
1922	19.82	9.33	14.95	9.32	1.06	5.49	2.59	.64
1923	23.35	9.54	12.83	9.88	1.51	4.58	3.66	.59
1924	62.19	11.08	12.95	10.43	2.02	6.72	4.01	.52
1925	45.25	14.06	19.59	12.92	2.58	8.88	6.01	.85
1926	57.82	19.16	34.18	19.87	6.51	11.55	8.53	1.30
1927	70.24	27.22	39.72	28.27	6.13	16.08	11.39	1.92
1928	81.37	40.62	50.05	37.87	12.00	22.00	14.59	3.57
1929	85.41	52.60	64.48	43.35	20.78	28.63	17.03	4.63
1930	89.23	66.26	71.66	46.78	27.16	39.22	26.57	5.88
1931	94.38	79.92	81.81	58.11	39.22	51.55	41.89	8.60
1932	98.02	88.06	87.35	70.72	62.38	62.60	52.42	16.81
1933	99.14	93.98	84.66	76.22	72.11	69.18	59.33	25.08

TABLE 52.—Hogs: Slaughter under Federal inspection in the United States and by geographical regions, 1908-34

Year ended June 30	North At- lantic States ¹	South At- lantic States ²	Eastern Corn Belt States	North- western Corn Belt States	South- western Corn Belt States	South Central States	Inter- moun- tain States	Pacific States	United States
	<i>Thou- sands</i>	<i>Thou- sands</i>	<i>Thou- sands</i>	<i>Thou- sands</i>	<i>Thou- sands</i>	<i>Thou- sands</i>	<i>Thou- sands</i>	<i>Thou- sands</i>	<i>Thou- sands</i>
1908	7,053	233	13,117	6,589	6,676	743	301	401	35,113
1909	6,705	256	13,232	6,095	7,273	1,143	290	434	35,428
1910	5,299	228	10,223	4,780	5,550	961	240	385	27,666
1911	5,427	251	11,518	5,283	5,806	1,009	217	405	29,916
1912	6,481	289	13,449	6,457	6,555	964	248	533	34,976
1913	6,000	266	12,450	6,071	5,779	873	243	606	32,288
1914	6,236	300	12,570	6,437	5,869	981	251	646	33,290
1915	6,375	308	14,451	7,184	5,826	1,075	287	742	36,248
1916	7,219	384	15,359	7,737	6,550	1,701	466	1,067	40,483
1917	6,646	427	15,366	7,627	6,732	2,054	496	863	40,211
1918	5,451	474	13,790	7,149	6,195	1,318	437	635	35,499
1919	6,435	691	17,089	9,064	8,304	1,590	520	705	44,398
1920	6,186	848	14,616	8,602	6,652	1,065	426	587	38,982
1921	6,856	565	13,725	8,343	6,038	1,085	389	702	37,703
1922	7,233	660	13,841	8,500	6,482	1,353	452	895	39,416
1923	8,163	733	16,827	11,132	8,606	1,561	505	1,073	48,600
1924	9,372	779	18,877	13,650	8,354	1,597	635	1,152	54,416
1925	8,209	777	15,788	13,385	7,120	1,444	612	1,125	48,460
1926	6,927	642	12,981	11,953	5,411	1,056	583	890	40,443
1927	6,863	684	13,609	12,947	5,907	1,129	547	964	42,650
1928	7,993	813	15,584	13,684	6,939	1,460	693	1,181	48,347
1929	7,290	785	15,706	13,113	6,952	1,578	658	1,082	47,164
1930	7,028	818	15,803	13,775	6,169	1,368	652	1,076	46,689
1931	6,539	683	14,644	13,793	5,489	1,202	643	1,027	44,021
1932	6,998	601	14,308	14,826	6,075	1,246	695	1,103	45,852
1933	6,637	645	14,482	13,797	6,625	1,622	723	1,167	45,698
1934	6,629	638	15,084	13,589	6,568	1,518	731	1,016	45,773

¹ Figures for Delaware, Maryland, and District of Columbia are also included in this column.² Not including federally inspected slaughter in Delaware, Maryland, and District of Columbia.

TABLE 53.—*Percentage distribution of federally inspected hog slaughter by regions, years ended June 30, 1908-34*

Year ended June 30	North- At- lantic States ¹	South- At- lantic States ²	South Central States ³	West- ern States ⁴	North Central States (Corn Belt)			Total
					East- ern Corn Belt ⁵	South- west- ern Corn Belt ⁶	North- west- ern Corn Belt ⁷	
	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
1908.....	20.1	0.7	2.1	2.0	37.4	19.0	18.8	75.2
1909.....	18.9	.7	3.2	2.0	37.4	20.5	17.2	75.1
1910.....	19.2	.8	3.5	2.3	37.0	20.1	17.3	74.4
1911.....	18.1	.8	3.4	2.1	38.5	19.4	17.7	75.6
1912.....	18.5	.8	2.8	2.2	38.5	18.7	18.5	75.7
1913.....	18.6	.8	2.7	2.6	38.6	17.9	18.8	75.3
1914.....	18.7	.9	3.0	2.7	37.8	17.6	19.3	74.7
1915.....	17.6	.8	3.0	2.8	39.9	16.1	19.8	75.8
1916.....	17.8	.9	4.2	3.8	38.4	16.2	19.1	73.7
1917.....	16.5	1.1	5.1	3.4	38.2	16.7	19.0	73.9
1918.....	15.4	1.3	3.7	3.0	38.9	17.5	20.2	76.6
1919.....	14.5	1.6	3.6	2.8	38.5	18.7	20.4	77.6
1920.....	15.8	2.2	2.7	2.6	37.5	17.1	22.1	76.7
1921.....	18.2	1.5	2.9	2.9	36.4	16.0	22.1	74.5
1922.....	18.3	1.7	3.4	3.4	35.1	16.4	21.6	73.1
1923.....	16.8	1.5	3.2	3.3	34.6	17.7	22.9	75.2
1924.....	17.2	1.4	2.9	3.3	34.7	15.4	25.1	75.2
1925.....	16.9	1.6	3.0	3.6	32.6	14.7	27.6	74.9
1926.....	17.1	1.6	2.6	3.6	32.1	13.4	29.6	75.1
1927.....	16.1	1.6	2.7	3.5	31.9	13.9	30.4	76.2
1928.....	16.5	1.7	3.0	3.9	32.2	14.4	28.3	74.9
1929.....	15.5	1.7	3.3	3.7	33.3	14.7	27.8	75.8
1930.....	15.1	1.8	2.9	3.7	33.8	13.2	29.5	76.5
1931.....	14.8	1.6	2.7	3.8	33.3	12.5	31.3	77.1
1932.....	15.3	1.3	2.7	3.9	31.2	13.2	32.4	76.8
1933.....	14.5	1.5	3.5	4.1	31.7	14.5	30.2	76.4
1934.....	14.5	1.4	3.3	3.8	33.0	14.3	29.7	77.0

¹ Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, Pennsylvania; also Delaware, Maryland, and District of Columbia.

² Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida.

³ Alabama, Mississippi, Kentucky, Tennessee, Louisiana, Arkansas, Texas, Oklahoma.

⁴ Montana, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Idaho, Washington, Oregon, California.

⁵ Ohio, Indiana, Illinois, Michigan, Wisconsin.

⁶ Kansas, Missouri.

⁷ Minnesota, Iowa, Nebraska, North Dakota, South Dakota.

TABLE 54.—Hog slaughter under Federal inspection at principal market centers and at all other points, by groups of Corn Belt States, 1908-33

Year ended June 30	5 eastern Corn Belt States ¹				5 northwestern Corn Belt States ²				2 southwestern Corn Belt States ³				12 Corn Belt States				Total Corn Belt slaugh- ter
	Principal markets ⁴		All other points		Principal markets ⁵		All other points		Principal markets ⁶		All other points		Principal markets		All other points		
	Number	Per- centage of area total	Number	Per- centage of area total	Number	Per- centage of area total	Number	Per- centage of area total	Number	Per- centage of area total	Number	Per- centage of area total	Number	Per- centage of area total	Number	Per- centage of area total	
	Thou- sands	Percent	Thou- sands	Percent	Thou- sands	Percent	Thou- sands	Percent	Thou- sands	Percent	Thou- sands	Percent	Thou- sands	Percent	Thou- sands	Percent	Thou- sands
1908	12,316	93.9	801	6.1	4,138	62.8	2,450	37.2	5,758	86.3	918	13.7	22,212	84.2	4,169	15.8	26,381
1909	12,386	93.6	847	6.4	3,872	63.5	2,223	36.5	6,326	87.0	946	13.0	22,584	84.9	4,016	15.1	26,600
1910	9,543	93.3	680	6.7	3,035	63.5	1,746	36.5	4,634	83.5	916	16.5	17,212	83.7	3,342	16.3	20,554
1911	10,761	93.4	756	6.6	3,697	70.0	1,586	36.0	4,922	84.8	884	15.2	19,380	85.7	3,226	14.3	22,606
1912	12,584	93.6	865	6.7	4,434	68.7	2,023	31.3	5,505	84.0	1,050	16.0	22,523	85.1	3,938	14.9	26,461
1913	11,612	93.3	837	6.7	4,018	66.2	2,053	33.8	4,694	81.2	1,085	18.8	20,324	83.6	3,975	16.4	24,299
1914	11,725	93.3	845	6.7	4,136	65.0	2,251	35.0	4,575	77.9	1,294	22.1	20,486	82.4	4,390	17.6	24,876
1915	13,516	93.5	935	6.5	4,480	62.4	2,704	37.6	4,418	75.8	1,408	24.2	22,414	81.6	5,047	18.4	27,461
1916	14,367	93.5	992	6.5	4,881	63.1	2,866	36.9	5,061	77.3	1,458	23.7	24,309	82.0	5,336	18.0	29,645
1917	14,372	93.5	994	6.5	4,895	64.2	2,751	35.8	5,493	81.6	1,488	23.7	24,760	83.3	4,964	16.7	29,724
1918	12,908	93.6	882	6.4	4,647	65.0	2,502	35.0	5,496	80.5	1,208	18.5	22,611	83.1	4,592	16.9	27,133
1919	16,162	94.6	927	5.4	5,710	63.0	3,354	37.0	6,739	81.1	1,566	18.9	23,851	83.0	5,847	17.0	34,458
1920	13,587	92.6	1,079	7.4	5,249	61.0	3,353	39.0	5,065	76.1	1,587	23.9	23,851	79.8	6,019	20.2	28,106
1921	12,682	92.4	1,043	7.6	4,953	59.4	3,390	40.6	4,254	70.4	1,734	29.6	21,889	77.9	6,217	22.1	29,802
1922	12,770	91.5	1,171	8.5	4,707	55.4	3,793	44.6	4,855	72.3	1,784	27.0	22,102	76.6	6,761	23.4	36,566
1923	15,602	92.7	1,225	7.3	6,749	60.6	4,353	39.4	6,359	76.0	2,068	24.0	23,890	79.0	7,676	21.0	40,881
1924	17,356	91.9	1,521	8.1	8,043	58.9	5,607	41.1	6,057	72.5	2,237	27.5	31,456	77.0	9,425	23.0	48,881
1925	14,323	90.7	1,465	9.3	8,153	60.9	5,231	39.1	5,037	70.7	2,083	29.3	27,513	75.8	8,779	24.2	36,292
1926	11,637	89.6	1,344	10.4	6,342	53.0	5,621	47.0	4,892	66.4	1,819	33.6	21,571	71.1	9,784	28.9	30,355
1927	12,130	89.1	1,478	10.9	6,400	49.4	6,547	50.6	4,822	69.1	1,825	30.9	22,612	69.7	8,850	30.3	32,462
1928	13,767	88.3	1,817	11.7	6,696	48.9	6,988	51.8	4,832	69.6	2,107	30.4	25,245	68.9	10,917	31.1	36,207
1929	13,710	87.3	1,997	12.7	5,921	45.2	7,192	54.8	5,024	70.8	1,928	27.8	24,655	68.8	11,168	31.2	35,772
1930	13,732	86.9	2,071	13.1	6,481	47.0	7,294	53.0	4,365	70.8	1,803	29.2	24,578	68.8	11,486	31.9	35,746
1931	12,546	85.7	2,098	14.3	6,206	43.0	7,586	56.0	3,087	67.2	1,802	32.8	22,439	66.1	11,496	33.3	33,925
1932	12,200	85.3	2,108	14.7	6,412	43.2	8,414	56.8	4,384	68.9	1,891	31.1	22,796	64.7	12,413	35.3	35,209
1933	12,203	84.6	2,229	15.4	6,541	40.2	8,256	59.8	4,591	68.3	1,901	30.7	22,385	64.1	12,520	35.9	34,904
1934	12,859	85.2	2,225	14.8	5,890	43.3	7,699	56.7	4,667	71.1	1,905	28.9	23,416	66.4	11,825	35.6	35,241

¹ Ohio, Indiana, Michigan, Wisconsin.² Minnesota, Iowa, North Dakota, South Dakota, Nebraska.³ Missouri, Kansas.⁴ Chicago, Cincinnati, Cleveland, Detroit, Indianapolis, Milwaukee, National Stockyards.⁵ St. Paul, Sioux City, Omaha.⁶ Kansas City, St. Joseph, Wichita.⁷ Purchases on Government account for the emergency hog production control program from Aug. 22 to Oct. 7, 1933 are excluded.

Compiled from Meat Inspection Records of Bureau of Animal Industry.

TABLE 55.—Motor-truck registrations in the Corn Belt States and in the United States, 1920-33

State and region	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
	Thou- sands	Thou- sands	Thou- sands	Thou- sands	Thou- sands	Thou- sands	Thou- sands	Thou- sands	Thou- sands	Thou- sands	Thou- sands	Thou- sands	Thou- sands	Thou- sands
Illinois.....	65	80	100	122	141	161	175	185	190	203	208	202	182	186
Indiana.....	33	43	57	73	85	95	107	116	117	125	128	130	122	116
Michigan.....	46	50	60	72	83	103	140	156	165	176	167	153	122	122
Ohio.....	83	99	118	142	165	167	185	196	199	206	204	192	169	158
Wisconsin.....	16	21	26	35	50	66	80	88	95	104	105	114	107	104
East Corn Belt.....	243	293	361	444	524	592	696	741	766	814	812	791	580	686
Iowa.....	30	31	31	36	41	46	51	55	61	70	72	78	74	69
Minnesota.....	24	24	39	49	38	45	71	81	90	100	108	108	101	99
Nebraska.....	19	19	23	27	31	37	29	32	33	42	59	60	53	54
North Dakota.....	2	2	3	3	5	11	12	16	22	26	28	27	25	25
South Dakota.....	8	8	9	11	11	14	14	17	20	23	25	24	19	23
Northwest Corn Belt.....	83	84	105	126	126	153	177	201	226	261	292	297	247	270
Kansas.....	22	22	23	27	40	47	50	55	62	74	83	80	72	72
Missouri.....	30	35	40	46	51	61	67	72	76	85	91	96	99	104
Southwest Corn Belt.....	52	57	63	73	91	108	117	127	138	159	174	176	171	176
Total Corn Belt.....	378	434	529	643	741	853	990	1,069	1,130	1,234	1,278	1,264	998	1,132
Other States.....	625	685	847	970	1,392	1,589	1,774	1,845	1,984	2,146	2,208	2,202	2,235	2,095
United States.....	1,003	1,119	1,376	1,613	2,133	2,442	2,764	2,914	3,114	3,380	3,486	3,466	3,233	3,227

Compiled from data furnished by the Bureau of Public Roads.

TABLE 56.—*Railroad freight charges on hogs and hog products between selected points, 1910-34*

Period	Chicago to Cleveland				Des Moines to Cleveland				Omaha to Cleveland			
	Freight charges		Margin between charges on hogs and yield		Freight charges		Margin between charges on hogs and yield		Freight charges		Margin between charges on hogs and yield	
	Hogs per 100 pounds	25 pounds fresh pork, cured lard 1	55 pounds fresh pork, cured lard 2	Basis, maxi-mum cured pork	Hogs per 100 pounds	25 pounds fresh pork, cured lard 1	55 pounds fresh pork, cured lard 2	Basis, maxi-mum cured pork	Hogs per 100 pounds	25 pounds fresh pork, cured lard 1	55 pounds fresh pork, cured lard 2	Basis, maxi-mum cured pork
Jan. 1 to May 19, 1910.....	15.0	12.5	14.9	2.5	38.5	21.4	24.9	17.1	38.5	26.3	27.8	12.2
May 20, 1910, to Dec. 31, 1911.....	15.0	12.5	14.9	2.5	38.5	21.4	24.9	17.1	38.5	26.3	27.8	12.2
Jan. 1, 1912, to May 14, 1913.....	15.0	12.5	14.9	2.5	38.5	20.7	23.2	17.8	38.5	28.7	30.3	9.8
May 15, 1913, to Oct. 19, 1914.....	15.0	12.5	14.9	2.5	38.5	20.7	23.2	17.8	38.5	28.7	30.3	9.8
Oct. 20 to Oct. 23, 1914.....	15.0	12.5	14.9	2.5	38.5	20.7	23.2	17.8	38.5	28.7	30.3	9.8
Oct. 24 to Oct. 25, 1914.....	15.8	12.5	14.9	3.3	39.0	20.7	23.2	18.3	39.0	28.7	30.3	10.3
Oct. 26, 1914, to Mar. 19, 1916.....	15.8	12.5	15.7	2.6	39.0	21.5	24.1	17.5	39.0	28.7	30.3	10.3
Mar. 20, 1916, to Sept. 19, 1917.....	18.0	13.2	15.7	4.8	41.5	21.5	24.1	20.0	41.5	29.5	31.1	16.5
Sept. 20, 1917, to Apr. 19, 1918.....	18.0	14.6	16.2	3.4	41.5	22.6	24.5	18.9	41.5	30.6	31.5	12.0
Apr. 20 to May 3, 1918.....	18.0	15.6	18.2	2.4	41.5	22.6	24.5	18.9	41.5	30.6	31.5	12.0
May 4 to May 14, 1918.....	18.0	15.6	18.2	2.4	41.5	22.6	24.5	18.9	41.5	30.6	31.5	12.0
May 15 to June 24, 1918.....	20.5	15.6	18.2	4.9	44.0	23.8	27.0	17.7	44.0	31.6	33.0	10.9
June 25, 1918, to Feb. 14, 1919.....	25.5	19.3	22.8	6.2	53.0	26.8	34.0	25.2	53.0	39.3	42.2	15.7
Feb. 15, 1919, to Aug. 25, 1920.....	25.5	19.3	22.8	6.2	53.0	26.8	34.0	25.2	53.0	39.3	42.2	15.7
Aug. 26, 1920, to Dec. 31, 1921.....	35.5	27.1	31.9	8.4	68.5	41.5	47.2	27.0	68.5	53.9	58.7	23.8
Jan. 1 to June 30, 1922.....	32.0	27.1	31.9	4.9	61.0	41.5	47.2	27.0	61.0	54.4	58.7	23.8
July 1, 1922, to June 30, 1923.....	32.0	24.5	28.7	7.5	62.0	37.3	42.5	24.7	62.0	54.4	58.7	23.8
July 1, 1923, to Oct. 31, 1928.....	32.0	24.5	28.7	7.5	62.0	37.3	42.5	24.7	62.0	54.4	58.7	23.8
Nov. 1, 1928, to Aug. 31, 1929.....	28.5	24.5	28.7	4.0	62.0	37.3	42.5	24.7	62.0	54.4	58.7	23.8
Sept. 1, 1929, to Oct. 31, 1929.....	28.5	24.5	28.7	4.0	62.0	37.3	42.5	24.7	62.0	54.4	58.7	23.8
Nov. 1, 1929, to Mar. 22, 1931.....	31.0	24.5	28.7	6.5	63.5	37.3	42.5	26.2	63.5	48.8	52.6	14.2
Mar. 23 to Dec. 2, 1931.....	31.0	24.5	28.7	6.5	63.5	37.3	42.5	26.2	63.5	48.8	52.6	14.2
Dec. 3, 1931, to Jan. 24, 1932.....	31.0	25.4	29.0	5.6	62.5	38.2	42.8	24.3	62.5	49.2	52.8	14.3
Jan. 25, 1932, to June 30, 1934.....	31.0	25.4	29.0	3.6	59.0	38.2	42.8	20.8	66.0	49.2	52.8	16.8

TABLE 56.—*Railroad freight charges on hogs and hog products between selected points, 1910-34—Continued*

Period	Des Moines to Chicago				Omaha to Chicago					
	Freight charges		Margin between charges on hogs and yield		Freight charges		Margin between charges on hogs and yield			
	Hogs, per 100 pounds	25 pounds fresh pork, 45 pounds cured pork and lard 1	55 pounds fresh pork, 15 pounds lard 2	Basis, maximum cured pork	Basis, maximum fresh pork	Hogs per 100 pounds	25 pounds fresh pork, 45 pounds cured pork and lard 1	55 pounds fresh pork, 15 pounds lard 2	Basis, maximum cured pork	Basis, maximum fresh pork
Jan. 1 to May 9, 1910.....	Cents 23.5	Cents 11.6	Cents 11.6	Cents 11.9	Cents 11.9	Cents 23.5	Cents 14.0	Cents 14.0	Cents 9.5	Cents 9.5
May 10, 1910, to June 24, 1918.....	23.5	11.6	11.6	11.9	11.9	23.5	16.4	16.4	7.1	7.1
June 25, 1918, to Aug. 25, 1920.....	29.5	14.4	14.4	15.1	15.1	29.5	20.6	20.6	8.9	8.9
Aug. 26, 1920, to Dec. 31, 1921.....	40.0	19.2	19.2	20.8	20.8	40.0	28.0	28.0	12.0	12.0
Jan. 1 to June 30, 1922.....	36.0	19.2	19.2	16.8	16.8	36.0	28.0	28.0	8.0	8.0
July 1, 1922, to Jan. 24, 1932.....	36.0	17.5	17.5	18.5	18.5	36.0	25.2	25.2	10.8	10.8
Jan. 25, 1932, to June 30, 1934.....	34.0	17.5	17.5	16.5	16.5	40.0	25.2	25.2	14.8	14.8

Period	Des Moines to New York				Omaha to New York					
	Freight charges		Margin between charges on hogs and yield		Freight charges		Margin between charges on hogs and yield			
	Hogs, per 100 pounds	25 pounds fresh pork, 45 pounds cured pork and lard 1	55 pounds fresh pork, 15 pounds lard 2	Basis, maximum cured pork	Basis, maximum fresh pork	Hogs per 100 pounds	25 pounds fresh pork, 45 pounds cured pork and lard 1	55 pounds fresh pork, 15 pounds lard 2	Basis, maximum cured pork	Basis, maximum fresh pork
Jan. 1 to May 9, 1910.....	Cents 53.5	Cents 34.6	Cents 39.5	Cents 18.9	Cents 14.0	Cents 53.5	Cents 38.8	Cents 42.2	Cents 14.7	Cents 11.3
May 10 to May 19, 1910.....	53.5	34.6	39.5	18.9	14.0	53.5	39.4	42.5	14.1	11.0
May 20, 1910, to Dec. 31, 1911.....	53.5	34.6	39.5	18.9	14.0	53.5	41.2	44.7	12.3	8.8
Jan. 1, 1912, to Jan. 14, 1915.....	53.5	33.8	37.9	19.7	15.6	53.5	41.2	44.7	12.3	8.8
Jan. 15, to Mar. 14, 1915.....	54.5	34.4	39.1	20.1	15.4	54.5	42.4	47.2	12.1	7.3
Mar. 15, 1915, to Jan. 12, 1916.....	55.0	34.4	39.1	20.6	15.9	55.0	42.4	47.2	12.6	7.8
Jan. 13, 1916, to July 15, 1917.....	56.5	34.4	39.2	22.1	17.3	56.5	42.5	48.0	14.0	9.2
July 16 to Sept. 17, 1917.....	56.5	36.9	40.1	19.6	16.4	56.5	44.5	48.0	12.0	8.5
Sept. 18, 1917, to Mar. 24, 1918.....	56.5	38.8	44.2	17.7	12.3	56.5	46.4	52.1	10.1	4.4

Period	Cleveland to New York						Chicago to New York					
	Freight charges			Margin between charges on hogs and yield			Freight charges			Margin between charges on hogs and yield		
	Hogs, per 100 pounds	25 pounds fresh pork, 45 pounds cured pork and lard ¹	55 pounds fresh pork, 15 pounds lard ²	Basis, maximum cured pork	Basis, maximum fresh pork		Hogs per 100 pounds	25 pounds fresh pork, 45 pounds cured pork and lard ¹	55 pounds fresh pork, 15 pounds lard ²	Basis, maximum cured pork	Basis, maximum fresh pork	
Mar. 25 to June 24, 1918.....	61.5	38.8	44.2	22.7	17.3		61.5	46.4	52.1	15.1	9.4	
June 25, 1918, to Feb. 14, 1919.....	73.0	48.0	54.7	25.0	18.3		73.0	57.8	64.5	15.2	8.5	
Feb. 15, 1919, to Aug. 25, 1920.....	68.5	43.0	54.7	20.5	13.8		68.5	57.8	64.5	10.7	4.0	
Aug. 26, 1920, to Dec. 31, 1921.....	93.0	66.7	76.1	26.3	16.9		93.0	80.0	86.4	15.0	5.6	
Jan. 1 to June 30, 1922.....	83.5	66.7	76.1	16.8	7.4		83.5	80.0	86.4	15.0	4.4	
July 1, 1922, to Nov. 9, 1923.....	83.5	68.5	68.5	23.5	15.0		83.5	71.9	80.4	13.1	4.9	
Nov. 10 to Nov. 14, 1923.....	83.5	60.0	68.5	23.5	15.0		83.5	71.9	80.4	13.6	5.1	
Nov. 15, 1923, to Apr. 19, 1927.....	85.5	60.0	68.5	25.5	17.0		85.5	70.4	80.4	13.6	8.1	
Apr. 20, 1927, to Oct. 31, 1928.....	85.5	58.5	65.2	27.0	20.3		85.5	70.4	80.4	13.1	8.4	
Nov. 1, 1928, to Sept. 30, 1929.....	83.5	58.5	65.2	25.0	18.3		83.5	70.4	80.4	14.1	7.4	
Oct. 1, 1929, to Oct. 31, 1930.....	83.5	58.5	65.2	25.0	18.3		83.5	70.4	80.4	14.1	7.4	
Nov. 1, 1930, to Mar. 22, 1931.....	82.5	58.5	65.2	24.0	17.3		82.5	70.4	80.4	12.1	5.4	
Mar. 23, to Dec. 2, 1931.....	79.5	58.5	65.2	21.0	14.3		79.5	70.4	80.4	12.1	5.4	
Dec. 3, 1931, to Jan. 24, 1932.....	79.5	55.6	64.2	23.9	15.3		79.5	67.0	76.0	15.5	6.5	
Jan. 25, 1932, to June 30, 1934.....	77.0	55.6	64.2	21.4	12.8		77.0	67.0	76.0	18.0	9.0	

Computed from data compiled from railroad tariffs.

¹ It is estimated that hog products obtained from 100 pounds of hogs are sold to consumers as follows: Fresh pork 25 pounds, cured pork 30 pounds, and lard 15 pounds.

² Pork usually sold to consumers as cured products sometimes moves in commerce as a fresh product. The freight charge shown in this column was computed on the assumption that all pork in some instances might be transported as fresh products.

TABLE 57.—Hogs purchased at specified number of concentration yards and average purchased per yard, by Corn Belt areas, 1929-33

Year	Northwestern Corn Belt				Southwestern Corn Belt				Eastern Corn Belt				Corn Belt			
	Yards		Hogs purchased		Yards	Hogs purchased		Yards	Hogs purchased		Yards	Hogs purchased		Yards	Hogs purchased	
			Total	Per yard		Total	Per yard		Total	Per yard		Total	Per yard		Total	Per yard
	Number	Number	Number	Number	Number	Number	Number	Number	Number	Number	Number	Number	Number	Number	Number	Number
1929.....	29	3,161,208	109,007	10,000	2	20,000	10,000	19	826,077	43,478	50	4,007,285	80,146			
1930.....	34	3,687,098	108,444	38,551	3	115,654	38,551	19	1,066,543	56,134	56	4,869,295	86,952			
1931.....	43	4,021,647	93,527	41,765	3	125,296	41,765	23	1,081,128	47,006	69	5,228,071	75,769			
1932.....	50	3,560,802	71,218	27,631	6	165,784	27,631	26	1,410,204	54,239	82	5,136,880	62,045			
1933.....	50	3,944,851	78,897	21,488	9	193,392	21,488	31	1,847,425	59,594	90	5,985,668	66,507			

All of the yards did not furnish data for the full 5-year period as some yards did not operate the entire period and others did not have complete records.

TABLE 58.—*Number and percentage of hogs obtained by packing plants and by concentration yards by different methods, 1931-33*

BY PACKING PLANTS

Method of obtaining hogs	1931			1932			1933		
	Re-ports	Hogs obtained		Re-ports	Hogs obtained		Re-ports	Hogs obtained	
	Num-ber	Number	Per-cent	Num-ber	Number	Per-cent	Num-ber	Number	Per-cent
Delivered at predetermined price.....		3, 026, 310	16. 5		4, 066, 908	18. 7		4, 037, 232	16. 4
Delivered and priced upon arrival.....		6, 394, 527	34. 9		7, 915, 508	36. 5		8, 717, 282	35. 4
Salaried representatives buying in the country.....		540, 467	3. 0		439, 508	2. 0		417, 549	1. 7
Private buyers purchasing on country weights.....		666, 864	3. 6		712, 755	3. 3		713, 891	2. 9
Own concentration yards.....		2, 520, 637	13. 8		2, 530, 629	11. 7		3, 482, 204	14. 1
Other concentration yards.....		404, 883	2. 2		962, 753	4. 4		1, 413, 812	5. 7
Public markets.....		4, 762, 089	26. 0		5, 077, 519	23. 4		5, 870, 805	23. 8
Total.....	58	18, 315, 677	100. 0	65	21, 705, 580	100. 0	72	24, 652, 775	100. 0

BY CONCENTRATION YARDS

Delivered at predetermined price.....		1, 926, 910	39. 6		1, 944, 733	41. 5		2, 413, 530	42. 5
Delivered and priced upon arrival.....		2, 696, 320	55. 5		2, 489, 582	53. 1		2, 840, 654	50. 1
Salaried representatives buying in the country.....		218, 450	4. 5		226, 223	4. 8		248, 653	4. 4
Private buyers purchasing on country weights.....		17, 666	. 4		27, 113	. 6		168, 689	3. 0
Total.....	62	4, 859, 346	100. 0	67	4, 687, 651	100. 0	79	5, 671, 526	100. 0

Individual packing plants and concentration yards reported on questionnaires the number of hogs obtained and the percentage of the hogs which they obtained by each of the methods listed for 1931, 1932, and 1933. The number of hogs obtained by each method was determined for individual outlets, and these were combined for each year. The percentages for each outlet for each of the years are based upon these totals.

TABLE 59.—*Consumption of hog products and beef, and index numbers of retail value of consumption and national income, 1910-33*

Year	Total consumption ¹		Index numbers (1910-14=100)		
	Hog products	Beef	Retail value of total consumption ²		National income ³
			Hog products	Beef	
	<i>Million pounds</i>	<i>Million pounds</i>			
1910	6,319	6,561	91.1	96.2	93.2
1911	7,109	6,342	95.7	93.4	94.4
1912	6,941	5,807	95.5	96.3	101.0
1913	7,177	5,854	107.3	106.5	106.1
1914	7,294	5,732	110.1	107.7	105.3
1915	7,189	5,418	103.9	99.6	110.0
1916	7,423	5,639	120.0	110.0	129.3
1917	6,232	6,083	143.3	139.7	154.9
1918	7,058	6,527	200.4	189.1	182.2
1919	7,047	6,475	217.8	194.9	198.1
1920	7,853	6,715	224.7	204.3	219.3
1921	8,109	6,172	180.6	161.2	184.4
1922	8,818	6,644	187.9	164.1	192.7
1923	10,045	6,858	207.3	175.5	219.3
1924	10,241	7,001	212.2	182.4	227.8
1925	9,316	7,175	225.5	192.2	243.0
1926	9,274	7,454	239.2	205.0	249.3
1927	9,756	6,926	236.0	197.9	252.8
1928	10,626	6,210	242.3	203.0	257.1
1929	10,571	6,247	244.5	216.1	265.1
1930	10,242	6,172	228.1	196.3	242.4
1931	10,420	6,156	194.3	162.2	202.1
1932	10,909	5,917	144.5	129.7	159.3
1933 ⁴	10,957	6,488	134.1	124.5	153.1

¹ Compiled from Statistics of Meat Production, Consumption, and Foreign Trade of the United States. Hog products include pork and lard.

² Computed from total consumption and retail prices of hog products and beef as shown in tables 2 and 3.

³ Realized income from production of goods and services. 1910-29, computed from data given by Leven, Moulton, and Warburton (8) 1930-33, from estimates by the Agricultural Adjustment Administration.

⁴ Preliminary.

TABLE 60.—*Retail prices of hog products and farm and wholesale prices of hogs, 1910-33*

Year	Hog products, value		Average price of hogs, per 100 pounds		Spread between value of 52.64 pounds of hog products and farm price of hogs
	Retail value of 52.64 pounds ¹	Retail price per 100 pounds ²	Farm price ³	Prices paid by wholesale slaughterers ⁴	
1910.....	\$9.01	\$17.11	\$8.16	\$8.90	\$0.85
1911.....	8.40	15.96	6.29	6.70	2.11
1912.....	8.59	16.32	6.71	7.55	1.88
1913.....	9.34	17.74	7.49	8.35	1.85
1914.....	9.43	17.91	7.57	8.30	1.86
1915.....	9.02	17.14	6.59	7.10	2.43
1916.....	10.09	19.17	8.20	9.60	1.89
1917.....	14.35	27.26	13.59	15.10	.76
1918.....	17.73	33.68	15.92	17.45	1.81
1919.....	19.30	36.66	16.23	17.85	3.07
1920.....	17.86	33.93	13.02	14.15	4.84
1921.....	13.91	26.42	7.84	8.52	6.07
1922.....	13.30	25.27	8.40	9.30	4.90
1923.....	12.88	24.47	7.13	7.57	5.75
1924.....	12.94	24.58	7.48	8.04	5.46
1925.....	15.11	28.70	11.00	11.81	4.11
1926.....	16.10	30.59	11.80	12.47	4.30
1927.....	14.95	28.40	9.68	10.03	5.27
1928.....	14.24	27.05	8.75	9.18	5.49
1929.....	14.44	27.43	9.44	10.09	5.00
1930.....	13.90	26.41	8.90	9.40	5.00
1931.....	11.64	22.11	5.89	6.11	5.75
1932.....	8.27	15.71	3.48	3.70	4.79
1933.....	7.64	14.51	3.52	3.83	4.12

¹ Computed on the basis of average retail prices in the United States of sliced ham, sliced bacon, pork chops, and lard as reported by Bureau of Labor Statistics, 1910-33 and a study of relationships of retail prices of these products in New York City to the retail value of the principal hog products and to retail prices of other hog products in New York City as reported by the Bureau of Agricultural Economics, 1924-33.

² Computed from the retail value shown of 52.64 pounds.

³ Average United States farm price, Bureau of Agricultural Economics.

⁴ 1910-20, estimates based on census reports and other information; 1921-33 compiled from reports of slaughterers to the Bureau of Agricultural Economics.

TABLE 61.—*Hog prices and wholesale values of hog products at Chicago, and spread between prices and values, 1905-34*

Year	Price of hogs, per 100 pounds ¹	Wholesale value of 70.94 pounds of hog products ²	Spread between price and value	Year	Price of hogs, per 100 pounds ¹	Wholesale value of 70.94 pounds of hog products ²	Spread between price and value
1905.....	\$5.36	\$5.97	\$0.61	1920.....	\$14.53	\$18.25	\$3.72
1906.....	6.34	7.11	.77	1921.....	8.84	12.80	3.96
1907.....	6.25	7.69	1.44	1922.....	9.67	12.76	3.09
1908.....	5.72	6.91	1.19	1923.....	7.83	11.07	3.24
1909.....	7.41	8.41	1.00	1924.....	8.46	11.24	2.78
1910.....	9.03	10.23	1.20	1925.....	12.23	15.48	3.25
1911.....	6.85	8.28	1.43	1926.....	12.94	16.78	3.84
1912.....	7.64	8.64	1.00	1927.....	10.45	14.10	3.65
1913.....	8.50	9.91	1.41	1928.....	9.70	13.20	3.50
1914.....	8.43	9.98	1.55	1929.....	10.51	13.59	3.08
1915.....	7.39	8.94	1.55	1930.....	9.85	13.40	3.55
1916.....	9.49	10.73	1.24	1931.....	6.65	10.05	3.40
1917.....	15.70	16.71	1.01	1932.....	4.08	6.45	2.37
1918.....	17.89	20.20	2.31	1933.....	4.20	6.48	2.28
1919.....	18.54	20.94	2.40	1934.....	4.95	9.08	4.13

¹ 1905-14, light butchers, 190-220 pounds; 1915-19, 200-250 pounds. Compiled from the National Provisioner. 1920-July 1930, Medium to Choice; August 1930-34, Good and Choice, medium weight, 200-220 pounds; Bureau of Agricultural Economics.

² Computed from prices of fresh and cured products including lard and inedible grease obtained from 100 pounds of hog. 1905-19 prices of all hog products used were compiled from the National Provisioner. 1920-34 prices from the Marketing Reporting Service of Bureau of Agricultural Economics were used for the principal hog products, but prices for minor products used were compiled from the National Provisioner. Constant weights for different products were used for all years in the computation of this series of values.

³ Includes processing tax (12½ cents in 1933, and 207 cents in 1934).

TABLE 62.—*Retail prices of beef and farm and wholesale prices of cattle, 1910-33*

Year	Beef		Average price per 100 pounds of cattle		Spread between value of 46.25 pounds of beef and farm price of cattle
	Retail value of 46.25 pounds ¹	Retail price per 100 pounds ²	Farm price ³	Price paid by wholesale slaughterers ⁴	
1910.....	\$7.43	\$16.06	\$4.80	\$5.08	\$2.63
1911.....	7.47	16.15	4.47	4.75	3.00
1912.....	8.40	18.16	5.11	5.67	3.29
1913.....	9.22	19.94	5.90	6.52	3.32
1914.....	9.52	20.58	6.24	6.93	3.28
1915.....	9.32	20.15	6.01	6.47	3.31
1916.....	9.89	21.38	6.48	7.17	3.41
1917.....	11.64	25.17	8.14	8.79	3.50
1918.....	14.68	31.74	9.45	10.15	5.23
1919.....	15.26	32.99	9.72	10.70	5.54
1920.....	15.42	33.34	8.47	9.15	6.95
1921.....	13.24	28.63	5.52	6.65	7.72
1922.....	12.52	27.07	5.42	6.58	7.10
1923.....	12.98	28.06	5.59	6.85	7.39
1924.....	13.21	28.56	5.56	6.64	7.65
1925.....	13.58	29.36	6.22	7.12	7.36
1926.....	13.94	30.14	6.44	7.32	7.50
1927.....	14.48	31.31	7.21	8.63	7.27
1928.....	16.57	35.83	9.10	10.59	7.47
1929.....	17.54	37.92	9.16	10.59	8.38
1930.....	16.12	34.85	7.51	8.54	8.61
1931.....	13.36	28.89	5.34	6.23	8.02
1932.....	11.12	24.04	4.06	4.94	7.06
1933.....	9.72	21.02	3.56	4.14	6.16

¹ Computed on the basis of average retail prices of 5 cuts of beef in the United States as reported by the Bureau of Labor Statistics from 1910-33 and a study of the relationships of prices of the same cuts in New York City to the total value of all cuts and to prices of other cuts in New York City as reported by the Bureau of Agricultural Economics, 1924-33.

² Computed from the retail value of 46.25 pounds of beef.

³ Average United States farm price, Bureau of Agricultural Economics.

⁴ 1910-20 estimates based on census reports and other information; 1921-33 compiled from reports of slaughterers to the Bureau of Agricultural Economics.

TABLE 63.—*Index numbers of rent, wages, and freight rates on hog products, 1913-33*

[1913=100]

Year	Rent ¹	Wages ²	Freight rates on hog products ³	Year	Rent ¹	Wages ²	Freight rates on hog products ³
1913.....	100.0	100	100.0	1924.....	167.8	209	176.4
1914.....	100.0	101	100.1	1925.....	167.6	213	176.4
1915.....	101.5	103	102.8	1926.....	165.6	218	175.8
1916.....	102.3	112	103.0	1927.....	162.2	220	173.8
1917.....	100.1	126	105.8	1928.....	157.9	222	173.3
1918.....	109.2	153	126.6	1929.....	153.9	225	173.3
1919.....	116.2	177	141.4	1930.....	149.3	221	173.3
1920.....	137.1	209	159.6	1931.....	141.6	206	173.1
1921.....	160.1	194	196.0	1932.....	127.3	183	170.7
1922.....	161.2	190	186.3	1933 ⁴	110.3	174	170.7
1923.....	164.2	205	176.4				

¹ Index of house rent as compiled from the Bureau of Labor Statistics. From 1913 to 1918, indexes are for December only. 1921 is an average of May, September, and December; 1922 and 1923 are averages of 4 quarters; other years are averages of June, December, and December of preceding year.

² Compiled from the Federal Reserve Bank, New York. Composite index of wages of the following classes of workers: Factory, building, railroad, agricultural, teachers, clerical, road building, retail trade, hotels, bituminous coal mining, power, light, and water, and telegraph and telephone.

³ Computed on basis of freight charges on 25 pounds of fresh pork and 45 pounds of cured pork and lard for 9 important movements.

⁴ Preliminary.

TABLE 64.—*Meat-packing industry: Wages, wage earners, livestock slaughtered, and value added by manufacture, for specified years, 1904-31*

Year	Wages	Wage earners	Livestock slaughtered, dressed weight ¹	Index numbers (1914 = 100)		Value added by manufacture	
				Wages per worker	Wages per 100 pounds of dressed weight of slaughter	Amount	Index numbers (1914 = 100)
	1,000 dollars	Number	Million pounds			1,000 dollars	
1904-----	40,327	74,134	9,741	86.5	66.1	108,058	51.4
1909-----	50,404	87,813	10,370	91.3	79.0	164,106	78.0
1914-----	62,136	98,832	10,098	100.0	100.0	210,303	100.0
1919-----	209,489	160,996	13,435	206.8	251.6	463,361	220.3
1921-----	152,903	117,042	12,237	207.6	201.6	332,744	158.2
1923-----	167,569	132,792	15,641	200.6	172.6	409,794	194.9
1925-----	159,355	120,422	14,455	210.3	177.4	425,094	202.1
1927-----	161,584	119,095	14,617	215.7	179.0	393,475	187.1
1929-----	165,867	122,605	15,154	215.3	175.8	460,526	219.0
1931-----	134,530	106,707	14,495	200.5	150.0	339,668	161.5

¹ Includes slaughter of hogs, cattle, calves, and sheep and lambs.

Base data compiled from Census of Manufactures, Bureau of the Census. Index numbers computed.

TABLE 65.—*Retail and farm values of 10 food products, retail value of bread, farm price of wheat, and spreads, 1913-33*

Year	Value of 10 food products			Retail value of 62 pounds of bread ³	Farm price of wheat, per bushel ⁴	Spread between retail value of 62 pounds of bread and farm price of wheat
	Retail ¹	Farm ²	Spread between retail and farm values			
1913-----	\$16.61	\$9.38	\$7.23	\$3.472	\$0.793	\$2.679
1914-----	16.98	9.64	7.34	3.896	.873	3.023
1915-----	16.92	9.42	7.50	4.366	1.127	3.239
1916-----	18.77	10.91	7.86	4.547	1.192	3.355
1917-----	24.47	15.65	8.82	5.714	2.033	3.681
1918-----	27.90	17.11	10.79	6.066	2.038	4.028
1919-----	30.56	18.63	11.93	6.179	2.158	4.021
1920-----	33.36	19.10	14.26	7.109	2.202	4.907
1921-----	26.00	12.33	13.67	6.138	1.167	4.971
1922-----	23.72	11.55	12.17	5.404	1.037	4.367
1923-----	24.53	11.76	12.77	5.399	.985	4.414
1924-----	24.44	11.60	12.84	5.430	1.105	4.325
1925-----	26.55	13.64	12.91	5.823	1.510	4.313
1926-----	27.41	14.29	13.12	5.828	1.351	4.477
1927-----	26.52	13.30	13.22	5.787	1.204	4.583
1928-----	26.45	13.36	13.09	5.663	1.134	4.529
1929-----	27.13	13.59	13.54	5.564	1.027	4.537
1930-----	25.49	11.91	13.58	5.410	.809	4.601
1931-----	20.86	8.36	12.50	4.707	.488	4.219
1932-----	17.30	6.04	11.26	4.242	.388	3.854
1933-----	17.00	6.25	10.75	4.397	.581	3.816

¹ Average retail value of 14.8 pounds of beef, 12.1 pounds of hog products, 2.0 pounds of hens, 5.1 dozen eggs, 39.8 quarts of milk, 5.1 pounds of butter, 1.2 pounds of cheese, 58.8 pounds of potatoes, 21.7 pounds of flour, and 32.9 pounds of bread, based on retail prices as reported by the Bureau of Labor Statistics for the United States. The above quantities represent the average monthly amounts purchased by 11,900 families in 1918-19 according to a survey reported in Bureau of Labor Statistics Bulletin 357 (16).

² Average farm value of 32 pounds of beef cattle, 23 pounds of hogs, 2.22 pounds of hens, 5.1 dozen eggs, 204 pounds of milk, 0.98 bushel of potatoes and 1.04 bushels of wheat, based on farm prices in the United States as reported by the Bureau of Agricultural Economics. The above quantities of farm products represent the estimated amounts required to produce the quantities of food listed in the preceding note.

³ Average retail price in 51 cities, U. S. Bureau of Labor Statistics.

⁴ Average United States farm price, Bureau of Agricultural Economics.

TABLE 66.—*The 5 most important market agencies, designated by type, to which or through which farmers in representative townships in 18 counties in the Corn Belt sold their hogs from the 1932 and 1933 litters*

State and county	Township	Hogs sold	Agencies, ¹ ranked, and percentage of hogs handled									
			First		Second		Third		Fourth		Fifth	
			Agency	Percent	Agency	Percent	Agency	Percent	Agency	Percent	Agency	Percent
Illinois:												
Knox	Sparta	11,600	PM	15	CY	14	CA	13	CY	8	PM	8
Stephenson	Buckeye	12,654	LB	22	LB	15	PM	13	PP	12	PM	6
Indiana:												
Clinton	Michigan	13,747	CY	25	PM	17	PM	8	PM	8		
Rush	Rushville	29,384	CY	32	LB	20	PM	10	PM	5	PM	5
Iowa:												
Carroll	Pleasant Valley	11,664	LB	35	LB	23	LB	17				
Cerro Gordo	Mount Vernon	9,402	PP	38	CA	13	CY	13	CY	5		
Linn	Marion	30,362	PP	59	CA	16						
Story	Collins	12,695	LB	30	LB	22	LB	7	LB	6		
Kansas:												
Marshall	Center	3,305	PM	18	PM	17	LB	14	PM	5	PM	5
Kentucky:												
Fayette	(No one township)	12,273	A	52	A	17						
Minnesota:												
Blue Earth	Rapidan	10,356	CA	28	LB	22	LB	12	LB	9	CY	6
Chippewa	Mandt	8,316	CY	41	LB	20	LB	15				
Missouri:												
Nodaway	Jefferson	4,286	CY	59	A	5						
Nebraska:												
Adams	Juniata	5,026	CY	37	LB	16	LB	15	A	13		
Cuming	Logan	13,781	LB	19	LB	10	PM	9	PM	6	PM	5
Ohio:												
Fayette	Paint	29,117	CA	29	CY	26	A	24				
Seneca	Clinton	7,027	LB	13	CY	11	CA	9	CA	6		
South Dakota:												
Lincoln	Canton	9,985	PP	45	PM	19	PM	12	PM	5	PM	5

¹ Types of market agency are abbreviated as follows: PM, public market; LB, local buyer; CY, concentration yard; A, auction; CA, cooperative shipping association; PP, packing plant. Ranking is based on individual agencies and such ranking is designated by the type of market which they represent. Agencies handling less than 5 percent of the hogs in a township are not shown.

Data were compiled from certified producers' statements of supporting evidence furnished in connection with hog-reduction contracts.

THE PACKERS AND STOCKYARDS ACT AND DIRECT MARKETING ³

The Packers and Stockyards Act, which became a law in 1921, is designed primarily to regulate interstate and foreign commerce in livestock, livestock products, dairy products, poultry, poultry products, and eggs. It is administered by the Bureau of Animal Industry, through its Packers and Stockyards Division.

The act consists in the main of two titles, one dealing with "packers" and the other with "stockyards." The jurisdiction of the Secretary of Agriculture with respect to packers extends to the purchase of livestock for slaughter, whether at public markets or elsewhere, and to the sale and the distribution of the products in interstate commerce. The act makes it unlawful for a packer to engage in unfair, unjustly discriminatory, or deceptive practices or devices, or to give unreasonable preferences or advantages to any particular person or locality, or to combine or agree with others to apportion supplies, or to manipulate or control prices in commerce.

In any case where the Secretary has reason to believe that a packer is violating any of the provisions of the act he has authority to issue a formal complaint and to hold a hearing for the purpose of determining the facts. If a violation is shown to exist the Secretary has the power to issue an order requiring the packer to cease and desist from continuing such violation.

In case a packer owns or operates an establishment or facility, whether located at his plant or elsewhere, where livestock are bought for slaughter, the Secretary has jurisdiction over the practices of the packer there and may investigate com-

³² Prepared by the Packers and Stockyards Division, Bureau of Animal Industry.

plaints with respect to weights, grading, docking, and prices of livestock or any other activities in connection with the handling and the buying of livestock. The act, however, does not confer on the Secretary any specific authority to prescribe rules as to how grading, docking, or filling of livestock shall be carried on either at a packer-operated yard or at a posted market. It is only when practices are found in connection with grading, docking, or filling that are in violation of the general provisions of the act that the Secretary can take action on these matters.

The "stockyard" title of the act, briefly, defines a stockyard as a place commonly known by that term, conducted for compensation or profit as a public market, where livestock are held or kept for sale or shipment in commerce and where the area, exclusive of runs, alleys, and passageways, is in excess of 20,000 square feet. When the Secretary finds such a place, the act requires that it be posted, and after this the practices and the rates and charges of the stockyard owner or operator and the commission firms and the practices of dealers engaged in business at the market are subject to the supervision of the Secretary. The agencies and dealers are required to register and to maintain suitable bonds to secure the performance of their obligations. The stockyard owner and the market agencies are also required to file tariffs of their rates and charges and to keep them open for public inspection.

If the Secretary on complaint or on his own initiative believes the rates and charges to be unreasonable he may institute a hearing for the purpose of determining whether they are reasonable. If he finds that they are not, he is empowered to issue an order prescribing reasonable rates. Likewise, if the Secretary has reason to believe that the practices of any of the persons at the posted stockyards are unfair, unjustly discriminatory, or deceptive he may issue an inquiry, hold a hearing, and order them to cease and desist if he finds that they are violating the law. In addition he has power to suspend the registrations of offenders for reasonable specified periods.

All persons subject to the act are required by its terms to keep such accounts and records as fully and correctly disclose all transactions involved in their business, and if they do not the Secretary has authority to prescribe the kind of records that shall be kept. Likewise, all these persons are required to file annually with the Secretary a report setting out the financial results of their operations. Audits of the books and records of stockyard companies, commission men, and dealers are made from time to time to determine their financial condition, and the Secretary has authority to suspend the registration of any dealers or commission firms if he finds them to be insolvent.

Considerable attention is paid to the maintenance and the operation of scales for weighing livestock at posted stockyards and the testing and inspection of the scales are regularly supervised by Bureau employees. District supervisors located at the markets maintain general observation of the scales and the weighing operations and investigate complaints with respect to weights of livestock which may be made by shippers and others. If packers maintain or operate scales for weighing livestock at unposted yards which they own or control, over which they buy livestock for slaughter, they are subject to the same requirements as posted markets with regard to maintaining the scales in an accurate weighing condition. Supervision over scales at such points, however, is not as extensive as that at posted yards because the funds available for enforcement activities are not sufficient to maintain the personnel that would be required. Any complaints that are made concerning weighing by packers, however, are promptly investigated and such steps are taken as may be necessary to correct any irregularities that are found to exist.

HOG CLASSIFICATIONS AND NOMENCLATURE USED AT VARIOUS TYPES OF MARKETS

The variations in the classifications for hogs and in the nomenclature used to designate their classes, weights, and grades are illustrated in the following record of 72 different classifications used by 204 different market outlets of different types.

PUBLIC-MARKET CLASSIFICATIONS

The 20 public markets visited used 10 different classifications. Five markets based their classifications on the standard grades used by the Federal Market News Service or some modification of them. For convenience that classification is shown in table 67.

TABLE 67.—*Classifications used by the Federal Market News Service*

Class	Weight	Grades
Barrows and gilts ¹ -----	140 to 160 pounds-----	Choice ^{(meat.} ^{fat.} Good. Medium. Cull.
	160 to 180 pounds-----	
	180 to 200 pounds-----	
	200 to 220 pounds-----	
	220 to 250 pounds-----	
	250 to 290 pounds-----	
	290 to 350 pounds-----	
Packing sows-----	350 pounds and heavier-----	Good. Medium. Cull.
	275 pounds down-----	
	275 to 350 pounds-----	
	350 to 425 pounds-----	
	425 to 550 pounds-----	
Pigs-----	550 pounds up-----	Choice. Good. Medium. Cull.
	100 to 140 pounds-----	
	100 pounds down-----	

¹ Standards for barrows and gilts agreed upon by representatives of packers, producers, and Department of Agriculture, 1931.

In actual practice, however, most of these markets sell many consignments of hogs in mixed grades at one price. Weight segregations were made as desired by purchasers. Seven markets used no definite classification, but sorting was made by kinds, weights, and degree of finish as required by the purchasers.

TABLE 68.—*Classifications at markets 13 to 20, inclusive*

No. 13	No. 14	No. 15	No. 16
Good butchers. Extreme heavies. Heavies. Mediums. Mixed weights. Yorkers. Light yorkers. Pigs. Plain. Common.	Choice to prime. ¹ Good to choice. ¹ Fair to good. ¹ Common to fair. ¹ Common. ¹ Skips. ¹ Culls. ¹	Top hogs (175 to 220 pounds). Mixed hogs. ¹	Good hogs. ¹ Good lights. Good pigs. Unfinished. Culls.
No. 17	No. 18	No. 19	No. 20
Good to choice. ¹ Fair to good. ¹ Common. ¹	Good heavies. Good mediums. Good lights. Pigs. Culls.	Butcher hogs. ¹ Pigs. Rough butchers. Sows.	Good butchers. ¹ Common.

¹ Segregations made by weights.

CLASSIFICATION AT 55 PACKING PLANTS

Replies by 55 public-market packers and interior packers to a questionnaire revealed 25 different classifications in use by them. The Federal standards were used by some plants as a basis for classification with which they combined the classifications of their respective parent companies. Those plants with such classifications were as follows:

Three plants combined the Federal standards with packer (A's) classifications.

One plant combined the Federal standards with packer (B's) classifications.

Eight plants combined the Federal standards with packer (C's) classifications.

Four plants combined the Federal standards with packer (D's) classifications.

Three plants combined the Federal standards with packer (E's) classifications.

Thirteen plants combined the Federal standards with their own classifications.

Four plants used no grade terms but varied prices according to the qualities in the lots. Three plants bought only Choice hogs within certain weight ranges and quoted on no other kinds. One plant used the grade and weight terms shown in a Kansas City livestock market paper. One packing plant used the weight and grade schedule of the Sioux City market with seasonal variations. Fifteen plants used the classifications shown in table 69.

TABLE 69.—*Classifications used by 15 packing plants*

No. 1	No. 2	No. 3	No. 4	No. 5
Prime hogs. ¹ Good packers. Rough packers. Common hogs. Fair pigs.	Good butchers. ¹ Fair lights. Pigs. Culls. Medium packers. Fair packers. Poor packers. Skips.	Good to choice. ¹ Smooth. ¹ Unfinished. ¹	Choice. Good. Medium. Common. Skips.	Good heavy butchers. Good medium butchers. Good light butchers. Culls.
No. 6	No. 7	No. 8	No. 9	No. 10
Top hogs (180-210 pounds). Good. Medium.	Choice heavy butchers. Choice medium butchers. Choice light butchers. Choice packers. Unfinished. Scurvys.	Top hogs (160-200 pounds). Good hogs. Throwouts.	Good hogs. ¹ Culls.	Choice. ¹ Good. ¹ Mixed. ¹ Poor. ¹
No. 11	No. 12	No. 13	No. 14	No. 15
Top hogs (190-220 pounds). Well finished. Culls.	Good. ¹ Medium. ¹ Common. ¹	Prime (150-260 pounds). Prime (260-300 pounds). Prime heavies (300 pounds up). Culls.	No. 1. ¹ No. 2. ¹ Throwouts. ¹	Finished. Unfinished.

¹ Segregations made by weights.

CLASSIFICATIONS AT 90 CONCENTRATION YARDS

Ninety concentration yards and assembly points used 26 different grade classifications for hogs according to their replies to questionnaires. The classifications are listed as follows:

1. Twenty-one concentration yards used Federal official standard grades for hogs with seasonal variations in the weight groups.
2. Twelve concentration yards used the Federal official standards adjusted to the grade and weight classifications of packer (A).
3. Three concentration yards used the Federal official standards adjusted to the grade and weight classifications of packer (B).
4. One concentration yard used the Federal official standards adjusted to the grade and weight classifications of packer (C).
5. Eleven concentration yards used the weight segregations only except for "cull" hogs. One term was used to designate hogs of that grade. Prices vary with the degrees of quality in the better hogs but no grade terms were used to designate them.
6. Five concentration yards used the Chicago market grade and weight classifications.
7. Four concentration yards used the Kansas City market grade and weight classifications.
8. Four concentration yards used the Mason City grade and weight classifications.
9. Three concentration yards used the grade and weight classifications of the purchasers, that is, made segregations as desired by them, using their terms.
10. Three concentration yards used variable weight and grade classifications according to competitive requirements.

The other 16 groups and individual yards reported their grades as shown in table 70.

TABLE 70.—*Grades used by 16 groups and individual yards*

No. 11 (4 yards)	No. 12 (3 yards)	No. 13 (2 yards)	No. 14 (2 yards)	No. 15 (2 yards)	No. 16 (1 yard)
Choice. Good. Medium. Culls.	Good to choice. ¹ Medium. ¹ Culls. ¹	Butchers. ¹ Packers. ¹	Good. Medium. Common.	Good. Medium. Culls.	Heavies. Mediums. Lights. Unfinished.
No. 17 (1 yard)	No. 18 (1 yard)	No. 19 (1 yard)	No. 20 (1 yard)	No. 21 (1 yard)	
Primes. ¹ Fair prime. ¹ Poor. ¹	Choice heavy butchers. Choice medium butchers. Choice light butchers. Choice light lights. Choice pigs. Choice packers. Culls.	Primes. ¹ Half fat. ¹ Culls.	Choice. Good. Common. Culls.	Primes. ¹ Choice. ¹ Good. ¹ Medium. ¹ Culls. ¹	
No. 22 (1 yard)	No. 23 (1 yard)	No. 24 (1 yard)	No. 25 (1 yard)	No. 26 (1 yard)	
Good. Medium.	Lights. Mixed heavies. Extreme heavies. Yorkers. Light Yorkers. Pigs. Culls.	Good. Fair. Medium. Culls.	Good mixed hogs. Culls.	Good. Middles. Fair. Common.	

¹ Segregations made by weight.

CLASSIFICATIONS AT 39 AUCTION MARKETS

Reports on questionnaires from 39 auction markets showed 11 different classifications for hogs in use among them. These classifications were recorded as follows:

1. Seven auction markets used the Federal standards as a basis for classification but with local variations.
2. At 24 auction markets hogs were grouped by breed, size, and condition and sold by the head.
3. At one auction market only feeder pigs were handled and were classified by color, size, condition, and quality.
4. One auction used "Richmond, Va. packer grades."

The other classifications are grouped as shown in table 71.

TABLE 71.—*Other hog classifications at auction markets*

No. 5 (4 auctions)	No. 6 (3 auctions)	No. 7 (3 auctions)	No. 8 (1 auction)
Meat hogs. ¹ Fat hogs. ¹	Good hogs. Culls.	Californias. Butcher hogs. Packing hogs.	Choice hogs. Common.
No. 9 (1 auction)	No. 10 (1 auction)	No. 11 (1 auction)	
Fat hogs. Culls.	Good fat hogs. Common hogs. Meat hogs.	Good hogs. Unfinished.	

¹ Segregations made by weights.

CLASSIFICATIONS USED BY LIVESTOCK TRADE PAPERS

Livestock trade papers at public markets used a wide variety of terms descriptive of the weights and grades of hogs. Some quoted prices in tabular form; others gave quotations in running comment, using local trade nomenclature. Many of the trade papers published lists of representative sales to supplement other forms of quotations. The classifications used by six livestock market papers in quoting the hog market are given in table 71.

TABLE 71.—*Classifications used by six market papers*

No. 1	No. 2	No. 5
Underweights: Selected, 140 to 160 pounds. Good-Choice, 140 to 160 pounds.	Good to choice butchers. ¹ Good to Choice heavies. Medium grades. Thin hogs.	Butchers: Highly finished. Fair to Good. Common to Fair.
Light: Selected, 160 to 180 pounds. Good-Choice, 160 to 180 pounds.	Lights. Light lights. Packing sows. Thin sows.	Good: Light. Light lights. Pigs.
Light butchers: Good-Choice: 180 to 200 pounds. 200 to 220 pounds.	No. 3	Common to Fair: Lights. Light lights. Pigs.
Medium-weight butcher: Good-Choice: 220 to 240 pounds. 240 to 260 pounds.	Lights: Good to Choice, 160 to 200 pounds.	Packing sows: Smooth. Rough. Thin.
Heavy butcher: 260 to 280 pounds. 280 to 300 pounds.	Butchers: Medium weight, 200 to 250 pounds.	No. 6
Good-Choice: 300 to 375 pounds. Over 375 pounds.	Heavies. Light lights. Pigs.	Butchers: Choice. Better grade lights. Plain lights.
Common to Fair: 140 to 200 pounds. 200 to 250 pounds. 250 to 325 pounds.	No. 4	Sows: Rough weighty.
Poor to Good: Light packing, 275 to 350 pounds. Heavy packing, 350 to 500 pounds.	Butcher hogs, 200 pounds up. Light hogs, 160 to 200 pounds. Light lights. Pigs.	
Rough heavy packing. Stags, subject to 70 pounds dockage.		
Pigs: Good to choice, 110 to 135 pounds. Inferior to Fair.		
Governments. Boars.		

¹ Segregations made by weights.

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF AGRICULTURAL ECONOMICS
MARKET NEWS SERVICE

307 NEW U. S. COURT HOUSE,

DES MOINES, IOWA

TELEPHONE: 3-4151
STATIONS 53 AND 54.

DAILY HOG MARKET REPORT - TUESDAY - JANUARY 22, 1935.

HOG RECEIPTS AT CONCENTRATION YARDS AND SLAUGHTER PLANTS

IN INTERIOR IOWA AND SOUTHERN MINNESOTA

THE FOLLOWING TABULATION SHOWS UNLOADS OF HOGS AT THE POINTS NAMED FOR THE 24 HOUR PERIOD ENDED AT 8:00 A. M. TODAY, WITH COMPARISONS:

	TODAY	WEEK AGO	YEAR AGO	THIS WEEK TO DATE	CORR. PERIOD LAST WEEK	CORR. PERIOD LAST YEAR
22 CONC. YARDS AND 9 PACKING PLANTS*	7,100	14,200	14,100	41,800	46,100	80,200

*CONCENTRATION YARDS:— BELLE PLAINE, BOONE, CARROLL, CHEROKEE, COUNCIL BLUFFS, CRESTON, DES MOINES, DOW CITY, EAGLE GROVE, HUMESTON, IOWA CITY, IOWA FALLS, MARSHALLTOWN, MANSON, OSKALOOSA, PERRY, SHENANDOAH, SPENCER, TAMA, VALLEY JUNCTION, WASHINGTON AND WAVERLY.
*PACKING PLANTS:— ALBERT LEA AND AUSTIN, MINNESOTA; AND CEDAR RAPIDS, DES MOINES, FT. DOOGIE, MARSHALLTOWN, MASON CITY, OTTUMWA AND WATERLOO, IOWA.

HOG RECEIPTS AT SEVEN PUBLIC MARKETS

	TODAY*	WEEK AGO	YEAR AGO	THIS WEEK TO DATE*	CORR. PERIOD LAST WEEK	CORR. PERIOD LAST YEAR
CHICAGO	19,000	28,030	32,192	41,083	52,532	79,820
KANSAS CITY	2,500	3,165	4,339	5,432	8,299	16,189
E. ST. LOUIS	8,000	13,232	10,231	18,368	26,402	28,435
OMAHA	8,500	6,860	17,015	10,611	12,357	26,916
ST. LOUIS	8,000	6,123	13,269	9,247	10,067	21,713
ST. JOSEPH	5,000	4,911	7,902	7,395	10,721	13,683
ST. PAUL	1,000	3,434	9,019	1,880	5,725	17,205
7 MARKET TOTALS:	52,000	65,755	93,967	94,016	126,103	203,661

*ESTIMATED.

INTERIOR IOWA AND SOUTHERN MINNESOTA HOG MARKETS, JANUARY 22, 1935.

(UNLESS OTHERWISE NOTED, PRICE QUOTATIONS IN THIS REPORT OF INTERIOR IOWA AND SOUTHERN MINNESOTA HOG MARKETS ARE BASED ON TRANSACTIONS MADE TODAY UP TO 10:30 A. M. COVERING DELIVERIES SHOWING NEITHER EXCESSIVE WEIGHT SHRINKAGE NOR EXCESSIVE FILLS)

THE GENERAL PRICE LEVEL WAS STEADY TO 10¢ HIGHER IN THE INTERIOR TRADE TUESDAY, AS COMPARED WITH MONDAY'S AVERAGE. SOME PACKING SOWS AND LIGHT LIGHT OFFERINGS WERE ADVANCED 15¢.

IN SPITE OF VERY LIGHT RECEIPTS THERE WAS A NOTICEABLE ABSENCE OF KEEN TRADING. WITH LOSSES REFLECTING A GREATER THAN AVERAGE SPREAD BETWEEN COSTS OF LIVE WEIGHTS AND CUT-OUT VALUES, BUYER INTERESTS WERE IN THE MARKET FOR ONLY ABOUT ENOUGH HOGS TO KEEP PLANTS OPERATING.

ALTHOUGH HAULING CONDITIONS WERE NOT MUCH IMPROVED FROM OTHER RECENT DAYS, IT WAS GENERALLY EXPECTED THAT SHIPPERS WOULD MAKE GREATER EFFORTS TO MOVE HOGS TODAY, AND THAT RECEIPTS WEDNESDAY MORNING WOULD BE QUITE A LITTLE HEAVIER THAN CURRENT TOTALS. THE CHIEF CAUSE OF THE VERY LIGHT RUNS SO FAR THIS WEEK IS LAID TO HAULING CONDITIONS.

FRESH PORK MARKETS WERE GENERALLY UNCHANGED IN MOST EASTERN WHOLESALE CENTERS, BUT THE TRADE WAS VERY UNEVEN AND DEMAND GENERALLY SLOW. LOIN CUTS AT PHILADELPHIA WERE QUOTED 50¢ TO \$1.00 LOWER, BUT THE SAME PRODUCT IN CHICAGO WAS STRONG TO \$1.00 HIGHER. CHICAGO WAS VIRTUALLY THE ONLY LARGE WHOLESALE CENTER TO SHOW NOTICEABLE IMPROVEMENT IN FRESH PORK DEMAND.

IN TUESDAY'S TRADE AT THE INTERIOR YARDS AND PACKING PLANTS, GOOD TO CHOICE BUTCHERS OF 220# AND HEAVIER SOLD WITHIN A GENERAL PRICE RANGE OF \$7.75 TO \$8.05. LONG HAULED CAR LOAD DELIVERIES WENT AS HIGH AS \$8.10 AND OCCASIONALLY REACHED \$8.15. THE BULK OF PLANT DELIVERIES SOLD AT \$7.85 TO \$9.05.

LIGHTER WEIGHTS OF 200 TO 220# USUALLY SOLD AT \$7.70 TO \$8.00, AND 180 TO 200# OFFERINGS CLEARED AT \$7.50 TO \$7.80. AVERAGES OF 160 TO 180# BROUGHT \$7.15 TO \$7.55, AND BETTER LIGHT LIGHTS SPREAD OUT AT \$6.25 TO \$7.15. SOMEWHAT HIGHER PRICES WERE QUOTABLE FOR LONG HAULED DELIVERIES OF CHOICE QUALITY IN ALL THE ABOVE LIGHTER GROUPS. MOST PACKING SOWS CLEARED AT \$6.90 TO \$7.25, WITH A FEW GOING TO \$7.35 AND \$7.40 OR SLIGHTLY HIGHER.

1-22-35. MSJ

SEE OTHER SIDE -

FIGURE 37.—Type of mimeographed hog-market report made available to hog producers daily by the Federal Market News Service from Des Moines, Iowa, p. 1; see fig. 38 for p. 2.

PAGE # 2.

1-22-35.

TODAY'S HOG QUOTATIONS:

QUOTATIONS APPLICABLE TO HOGS SHIPPED TO CONCENTRATION YARDS AND DIRECT TO INTERIOR PACKING PLANTS REPRESENT BULK TRANSACTIONS. LONG HAUL SHIPMENTS SHOWING EXCESSIVE WEIGHT SHRINKAGE AND HOGS EXCESSIVELY FILLED USUALLY SELL RESPECTIVELY SOMEWHAT ABOVE AND BELOW PRICES QUOTED. HOGS BOUGHT ON THE BASIS OF SHIPPING POINT WEIGHTS ARE ALSO EXCLUDED FROM QUOTATIONS. PUBLIC MARKET PRICES QUOTED ARE FOR HOGS SOLD AND WEIGHED UNDER CUSTOMARY STOCKYARD PRACTICES.

	INT. IOWA AND SO. MINNESOTA	CHICAGO	SIoux CITY	OMAHA	E. ST. LOUIS
	STOCKYARDS	STOCKYARDS	STOCKYARDS	STOCKYARDS	NATIONAL STOCKYARDS
	11:00 A. M.	10:30 A. M.	10:45 A. M.	10:45 A. M.	10:15 A. M.
Lt. Lts. (140-180#)					
Good-Choice	\$ 6.25-7.25	7.25-7.75	6.35-7.35*	6.50-7.40	7.00-7.70
MEDIUM	5.80-7.00	7.00-7.50	6.00-7.00*	6.00-7.25	6.75-7.50
Lt. Wts. (180-180#)					
Good-Choice	7.10-7.65	7.50-7.90	7.00-7.60*	7.25-7.75	7.50-7.90
MEDIUM	6.75-7.50	7.25-7.65	6.75-7.40*	6.85-7.65	7.25-7.75
Lt. Wts. (180-200#)					
Good-Choice	7.45-7.90	7.65-8.00	7.40-7.80*	7.65-7.85	7.75-8.10
MEDIUM	7.20-7.80	7.50-7.85	7.15-7.70*	7.35-7.75	7.60-8.00
MED. Wts. (200-220#)	7.65-8.05	7.85-8.10	7.70-7.90*	7.75-7.95	8.00-8.15
Good-CH	7.75-8.10	8.00-8.10	7.80-7.90*	7.75-7.95	8.00-8.15
Hvy. Wts. (250-290#)	7.75-8.10	8.00-8.10	7.85-7.90*	7.75-7.95	8.00-8.15
Good-CH	7.75-8.10	8.00-8.10	7.75-7.90*	7.75-7.90	7.90-8.15
Pkg. Sows - Good					
(275-350#)	7.00-7.35	7.40-7.65	7.30-7.40	7.60-7.75	7.10-7.25
(350-425#)	6.90-7.25	7.40-7.60	7.30-7.40	7.55-7.70	7.00-7.10
(425-550#)	6.75-7.15	7.35-7.50	7.25-7.40	7.50-7.65	6.90-7.10
MED. (275-550#)	6.00-7.10	6.50-7.40	6.50-7.25	6.50-7.50	6.50-7.10
SLTR. Pigs (100-140#)					
Good-Choice	-	5.50-7.50	5.25-6.75*	5.00-6.75	4.75-7.10
MEDIUM	-	4.75-7.25	4.50-6.35*	4.25-6.50	3.75-6.90
FOR. & STKR. Pigs					
Good-CH (70-140#)	3.75-6.00	-	3.75-6.35	3.50-5.50	-

*NOMINAL.

TODAY'S HOG TRADE AT PUBLIC MARKETS

CHICAGO, ILLINOIS (10:30 A. M.)

HOG RECEIPTS 19,000, INCLUDING 8,000 DIRECTS. WEIGHTS BELOW 220# ACTIVE, FULLY STEADY WITH MONDAY'S AVERAGE, LARGELY ON SHIPPER ACCOUNT, HEAVIER WEIGHTS AND PACKING SOWS DULL, WEAK TO 10¢ LOWER; WEIGHTS ABOVE 200#, \$8.00-\$8.10, TOP \$8.10, MOST BIDS ON HEAVIES \$8.00; DESIRABLE 160-200#, \$7.65-\$8.00; LIGHT LIGHTS \$7.35-\$7.65; SLAUGHTER PIGS MOSTLY \$5.50-\$7.00; GOOD PACKING SOWS AROUND \$7.50, FEW \$7.60, EXTREME WEIGHTS \$7.40 AND BELOW.

SIoux CITY, IOWA (10:45 A. M.)

OPENING BUTCHER BIDS MOSTLY 15¢ LOWER THAN MONDAY'S AVERAGE, GENERALLY ASKING STEADY; BETTER 190-300# BUTCHERS BID \$7.50-\$7.75, CHOICE HEAVY BUTCHERS HELD MOSTLY AT \$7.90; NO ACTION ON LIGHTER WEIGHTS; SOWS MOSTLY STEADY AT \$7.40; STAGS \$7.00 DOWN; OOD. LOTS FEEDER PIGS \$5.00-\$5.50.

OMAHA, NEBRASKA (10:45 A. M.)

VERY SLOW, EARLY TRADE STEADY TO 10¢ LOWER THAN MONDAY, VERY FEW BUTCHERS SOLD. BIG PACKERS NOT BIDDING BUT TALKING LOWER; SCATTERED LOTS BETTER 190-270#, \$7.75-\$7.95, TOP \$7.95; DESIRABLE 160-190#, \$7.35-\$7.75; 140-160#, \$6.50-\$7.35; SLAUGHTER PIGS \$5.00-\$6.25; GOOD PACKING SOWS \$7.50-\$7.60, FEW UP TO \$7.75; STAGS \$7.25 DOWN.

E. ST. LOUIS, ILL. (10:15 A. M.)

SLOW; MOSTLY 10¢ LOWER THAN MONDAY'S AVERAGE ON 180# UP; LIGHTER WEIGHTS ABOUT STEADY; SOWS STEADY TO SHADE LOWER; EARLY BULK 150-270#, \$8.00-\$8.15, TOP \$8.15; 170-180#, \$7.65-\$7.85; 150-160#, \$7.25-\$7.60; 130-140#, \$6.50-\$7.10; 100-120#, \$4.75-\$6.10; SOWS MOSTLY \$7.00-\$7.10.

KANSAS CITY, MO. (10:40 A. M.)

VERY SLOW, SHIPPING DEMAND NARROW; EARLY SALES STEADY TO 10¢ LOWER THAN MONDAY'S AVERAGE; LATER PACKER BIDS MOSTLY 10¢ LOWER, TOP \$8.10 ON CHOICE 220# UP; DESIRABLE 200# UP, \$8.00-\$8.10; 170-200#, \$7.75-\$8.00; BETTER GRADE 140-160#, \$7.25-\$7.75; SOWS \$7.35-\$7.60, FEW UP TO \$7.75; STOCK PIGS SCARCE.

ST. JOSEPH, MO. (10:30 A. M.)

SLOW, EARLY BIDS AND SALES GOOD AND CHOICE 180# UP STEADY TO MOSTLY 5¢ LOWER THAN MONDAY'S AVERAGE; NO BIDS ON LIGHTER WEIGHTS; TOP \$8.10, INCLUDING LOAD 322# HEAVIES; MOST SALES 200# AND UP, \$8.00-\$8.10; FEW 180-200#, \$7.90-\$8.00; SOWS STEADY AT \$7.25-\$7.75; MOST GOOD SOWS \$7.65-\$7.75; STAGS \$6.00-\$7.00; STOCK PIGS SCARCE.

ST. PAUL, MINN. (10:30 A. M.)

BARROWS AND GILTS SCALING 170# UPWARD FAIRLY ACTIVE, LARGELY 10¢ HIGHER, OTHER WEIGHTS AND CLASSES ABOUT STEADY, GOOD TO CHOICE 210-325#, \$8.00-\$8.10, TOP \$8.10 TO PACKERS AND SHIPPERS; BETTER 170-200#, \$7.75-\$8.00; 140-160#, \$6.75-\$7.75; DESIRABLE 100-130# KILLER PIGS AROUND \$5.25-\$6.50, FEW SALES FEEDERS \$4.00-\$5.00; BULK GOOD SOWS \$7.45-\$7.50.

1-22-35. MSJ.

- SEE OTHER SIDE -

K. L. UREAN,
ACTING IN CHARGE,

FIGURE 38.—Type of mimeograph hog-market report made available to hog producers daily by the Federal Market News Service from Des Moines, Iowa, p. 2.

L.S.-D.M. Form 12

 UNITED STATES DEPARTMENT OF AGRICULTURE
 Bureau of Agricultural Economics
 QUESTIONNAIRE ON HOG MARKETING

Name _____ County _____

Post Office _____ State _____

1. To how many of each of the following outlets can you conveniently market hogs, and how many hogs did you sell through each of these outlets in 1932 and 1933?

	Number of available outlets	Number of hogs sold	
		1932	1933
a. Public stockyards.....	_____	_____	_____
b. Packing plants.....	_____	_____	_____
c. Concentration yards and buying stations.....	_____	_____	_____
d. Local livestock buyers.....	_____	_____	_____
e. Auction markets.....	_____	_____	_____
f. Cooperative shipping associations.....	_____	_____	_____

- 2 Which of the above methods of selling hogs do you prefer? _____
 Why? _____

- 3 Have you found the sorting and grading, and weighing satisfactory when marketing hogs to the following agencies? If not satisfactory, state your reasons on the reverse side.

	Sorting and grading	Weighing
a. Public stockyards.....	_____	_____
b. Packing plants.....	_____	_____
c. Concentration yards and buying stations.....	_____	_____
d. Local livestock buyers.....	_____	_____
e. Auction markets.....	_____	_____

4. Do you usually sell hogs in (1) carlots _____ (2) truckloads _____
 or (3) less than truckloads _____

5. a. How do you receive price and other livestock market information and how often is such information received?

	Check Methods	How often received?
(1) Radio.....	_____	_____
(2) Daily mail report or card.....	_____	_____
(3) Daily paper.....	_____	_____
(4) Weekly paper.....	_____	_____
(5) Telephone.....	_____	_____
(6) Trucker.....	_____	_____
(7) Other (name).....	_____	_____

- b. For what market or markets do you obtain livestock prices and other information?

6. Suggestions for improving livestock marketing may be made on the other side of this sheet.

RETURN PROMPTLY IN ENCLOSED OFFICIAL ENVELOPE. NO POSTAGE REQUIRED.

FIGURE 39.—The questionnaire reproduced above was mailed to 68,900 farmers in the 12 North Central States and the States of Oklahoma, Kentucky, and Tennessee. A total of 12,461 questionnaires were returned. These were tabulated and analyzed, and each question was discussed in the part of the report which deals with the subject to which the question pertains.



